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SYDNEY, SATURDAY, OCTOBER 19, 1929.



No. 16.

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THE MEDICAL JOURNAL OF AUSTRALIA

VOL. II.-16TH YEAR.

SYDNEY, SATURDAY, OCTOBER 19, 1929.

No. 16.

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Australasian Medical Congress (British Medical Association)

Sydney, 1929-(Continued)

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The Sections.

SECTION OF OTO-RHINO-LARYNGOLOGY.

(Continued from page 562.)

Tumours of the Pituitary.

Dr. G. C. Scantlebury and Dr. J. H. Shaw (Melbourne) presented a paper in which they discussed tumours of the pituitary and the transsphenoidal approach to them. They reported four operations of this nature. In their description of pituitary tumours they adopted the classification of Erdheim into tumours arising from the hypophysis itself and developing within the sella turcica and tumours arising at the entrance to the hypophyseal fossa. Microscopically the cells of the posterior part of the pituitary were divisible into chromophobe and chromophile varieties. Both might give rise to tumours. The former formed adenomata and these were always characterized by the hypopituitary syndrome. The chromophile adenomata, in keeping with their cytogenic origin, might be found in two forms, the basophilic and the eosinophilic. With these tumours were seen hyperpituitary manifestations such as acromegaly. Mixed chromophobe and chromophile tumours also occurred. In dealing with the symptomatology the authors dealt in turn with hypopituitarism, hyperpituitarism and dyspituitarism. In regard to treatment. nothing could be done to prevent the occurrence of these tumours since they were ignorant of their causation. Relief of symptoms might be obtained, the growth of the tumour might be checked or portion of its substance might be removed. Relief from headaches might be given and sight might be restored. Decompression should always be followed by radiotherapy. In the four patients whose history was given in some detail, the result of operation had been satisfactory. A description of the steps of the operation concluded the paper.

DR. C. F. WARREN (Sydney) had seen four operations for the removal of pituitary tumours in London and many more by Hirsch at Vienna. All the patients in London died on the table from excessive hæmorrhage. Hirsch did not resect the nasal spine, but carried out a simple submucous resection. He showed exceptional ability, had no hæmorrhage and a high percentage of cures. This operation could be done by the ordinary rhinologist, but the conditions must be suitable. He thought it a good idea to remove the nasal spine to give a better view and more room. He congratulated Dr. Shaw and Dr. Scantlebury

on their courage and skill.

Dr. Kent Hughes (Melbourne) considered that this operation should be done by a rhinologist. On one occasion he had assisted a general surgeon who had taken one

hour to perform the submucous resection.

Dr. R. S. Godsall (Sydney) said that he had treated two patients with the late Herbert Marks. One of them had become drowsy soon afterwards and died. When the tumour in the other had been opened, there had been a gush of strawberry-coloured fluid. The cyst had been tapped and the patient had recovered. It was essential before operation to ascertain whether the tumour was solid or cystic, as solid tumours were not suitable for operation, but cystic ones were. He had a patient at the Royal Prince Alfred Hospital at present in whom a rapidly growing malignant tumour had been discovered radiographically. This patient had no headache, but was blind in one eye only and he refused operation. He was having deep X ray therapy and possibly might be given radium later.

Dr. W. Crosse (Brisbane) related that he had treated one patient in conjunction with a general surgeon. He had performed submucous resection and then the cerebrospinal fluid had gushed out; the patient died soon after.

Dr. H. S. Marsh (Sydney) had seen an operation performed by a general surgeon by the two-stage method. The patient had died soon after the first stage external operation by the frontal route. He thought that the nasal route was the safer one.

DR. ERIC BLASHKI (Sydney) said that one patient who had died at the Royal North Shore Hospital, had had a condition diagnosed as acute diabetic coma. At the post mortem examination a pituitary tumour had been found.

He had seen Hirsch perform several of these operations under local anæsthesia. The patient had walked in, had sat on a chair and had walked out in the end. The operation looked easy in Hirsch's hands and he was struck by the extreme precaution taken for asepsis. Every instrument used in the nose was resterilized before being used again. Hirsch had used a sucker instead of a curette.

DR. ARTHUR MURPHY (Brisbane) stated that Hirsch used a curette. He had noticed that Hirsch was not worried at all by bleeding, but simply packed the cavity, on one occasion for twenty-five minutes, went out of the theatre until the hæmorrhage had stopped and then returned to

finish the operation.

Dr. Graham Brown (Brisbane) considered that rhinologists should perform this operation. The two big men in the world in this respect were Hirsch and Cushing. Cushing obtained a wider exposure and a larger field for operation, but Hirsch got as good results by the intranasal route. In patients with narrow noses this route was not so good as the external one. Cushing removed all the little bunches of cells from the cell wall which would regenerate fluid if left behind. He sometimes had three changes of operators and the operation sometimes lasted six hours. He employed local anæsthesia and if necessary ether by the rectal method. When dealing with the adenomatous type Cushing never removed more than one-third of the tumour. The English school led by Percy Sargent advocated the frontal route.

He thought that X ray examination was important, as exact diagnosis before operation was necessary. Cartilaginous patches in the cyst wall were sometimes discovered in the skiagram. The posterior clinoid processes were pushed upwards and backwards by the adenoma. The hemianopsia extended exactly into the mid-line. One of his patients had been ill for three years and had been rapidly going down hill. The field of vision had been restricted, but had not reached the mid-line. He had operated by the nasal route and had drawn off fluid. The patient had died three days later. Post mortem examination had revealed a cystic swelling in the floor of the third ventricle and a condition of internal hydrocephalus. This showed that errors could easily be made and had been made by all who undertook this kind of work.

The Comparative Anatomy of the Paranasal Sinuses.

DR. ERIC GUTTERIDGE (Melbourne) read a paper on the comparative anatomy of the paranasal sinuses. He described the structures seen in the several types of animals. In reptilia, aves and pisces there were rudimentary nasal cavities conforming closely to the human type. Aves had three pairs of turbinated bones, monkeys had two. Domestic animals possessed well developed nasal The horse had three turbinate bones and three cavities. meati. In the horse the maxillary sinus was divided into anterior and posterior compartments by a more or less vertical septum. In the ox there was no septal division and no communication with the ventral turbinate sinus, but the maxillary sinus communicated with a wide palatal In the pig the antrum opened into the middle meatus, it was small and possessed a large orifice. dog this tendency to a recess formation was more developed. The frontal sinus in domestic animals was large and communicated widely with the ethmoid cells. The horse had a large frontal sinus divided into two parts. In the ox the frontal sinus extended from the level of the orbits to the horn processes. The frontal sinus of the pig was a vast excavation in the roof and sides of the cranium extending down above the nasal cavity. In the dog it varied with the size of the head. After describing the turbinate sinuses Dr. Gutteridge said that it might be seen that the mammalian sinuses were complex in shape and size and had various intercommunications. openings into each other and into the nasal cavity were by long narrow slits or small ostia.

DR. R. S. Godsall (Sydney) said that it was interesting to note that scarlet fever could not be produced in any other animal than man and he wondered whether the organisms which they considered to be the cause of scarlet fever, were the real cause.

Dr. A. Watkins (Newcastle) had dissected only one animal in Australia, namely, a sheep, in which he had

found the frontal sinuses to be full of white maggots. This was not a condition of suppurative sinusitis and he found the mucous membrane of the frontal cells thickened, as in catarrhal sinusitis of man. This was interesting, because if man had maggots in his frontal sinus, there would certainly be suppuration as well.

He often noticed a flow of salt water from the antra after surfing by bending the head down. The remedy to procure drainage seemed to be to teach man to walk on

his hands and knees.

Dr. Arthur Murphy (Brisbane) wondered why man alone was subject to the condition of deflected septum.

Dr. J. H. Shaw (Melbourne) stated that the functions of the sinuses in man were three. The first was that of a resonant apparatus for the voice. It was noticed that a faulty voice due to nasal trouble improved after the nose had been suitably treated. The second function was the reduction of the weight of the head in the upright position, though it was partly supported by the ligamentum nucha. The third applied to the axillary antrum; the space was useful in the young to provide room for the second dentition to develope; this space later became the antrum.

Dr. A. Muscio (Taree) remarked that man slept in closed compartments and breathed air full of bacteria and thus ran a greater risk of infection than animals. He wondered what were the chances of savages who lived in

the open air having infected sinuses.

Dr. G. A. Eadie (Melbourne) interjected that Australian

aborigines were free from sinusitis.

Dr. Graham Brown (Brisbane) thanked Dr. Gutteridge for a scientific paper which brought up the question of the position of the opening of the sinuses and showed that man must once have had his head down. For example, the sphenoid opening was in the centre of the anterior wall, an ideal position for drainage with the head down. Cattle in Europe who were stall fed, were subject to sinusitis which suggested that the predisposing cause of this condition was a closed and dusty atmosphere. Man had large antra for the development of speech which acquired many different registers; the sinuses were employed for the higher resonances. When the mucous membrane of the sinuses became swollen, the subject could not sing the high notes. The reason for narrow, thin faces in cold climates and broad faces with large nostrils in hot climates was that larger noses were developed to meet the needs of the varying conditions of humidity.

The Radical Mastoid Operation.

Dr. R. S. Godsall (Sydney) read a paper in which he discussed the need for a flap in the radical mastoid operation. He pointed out that there were obvious disadvantages to the flap method and described the technique of an operation which he had been performing for three years and in which no flap was used. He used the normal external auditory canal without cutting it away. The ordinary incision was made and the canal exposed, the external auditory meatus was protected. The incision was extended down to the tympanic ring on its posterior and superior quadrants by means of pieces of gauze. The canal was kept out of the field of operation by pledgets of gauze. The operation was completed and extreme care was taken to destroy the Eustachian tube until white clear bone was seen on the whole of the inner wall, except in the region of the oval window. One silkworm suture was passed through the whole thickness of tissue in the upper part of the posterior wound. This stitch included the cut edges of periosteum and its object was to lift the whole ear upwards and backwards and to straighten the meatus. Fine gauze was placed down the meatus to the inner wall. A strip of rubber tissue was placed in the posterior wound as far as the aditus and the ordinary pads were applied. The advantages of this method were that the whole operation could be completed in half an hour, except in very difficult cases, there was no graft to cut, there was no pain in the after treatment, there was no possibility of cicatrization of the canal and the posterior wound was under daily observation.

DR. W. KENT HUGHES (Melbourne) said that he would adopt Dr. Godsall's method. The time factor would be

an advantage.

Dr. C. F. Warren (Sydney) said that he was dissatisfied with all flaps. The chief points were speed in cutting, a good view and as little pain as possible in the after treatment. He asked how the Eustachian tube could be obliterated. He had a patient on whom a good radical operation had been performed by another doctor; there was still discharge through the Eustachian tube. It seemed to him that Dr. Godsall's new operation was similar in principle to his frontal sinus operation. He approved of the one stitch through the periosteum which pulled the ear upwards, and had always done this; he intended to try this new operation.

Dr. E. Culpin (Brisbane) said that the pain in the dressings was not due to pulling the gauze over the cut edges of the flap, but was due to the fact that the packing must be very firm to prevent the formation of granulations. He used Panse's flap and found it very satisfactory. "Mucidan" often cleared up Eustachian suppuration and in some cases after packing the radical mastoid cavity with bismuth-iodoform gauze at the time of operation, he used scarlet red at the second dressing. He employed secondary skin grafts some weeks after the operation when it was necessary to prevent the formation of false membrane. In one patient he had used a skin graft after curetting away granulations and signs of meningitis developed a few days later, but the patient recovered. This was one of the dangers of skin grafting.

Dr. W. Sangster (Adelaide) asked whether Dr. Godsall had any trouble in getting the posterior wound closed.

Dr. J. H. Shaw (Melbourne) remarked that when a skin graft had been employed and the cavity was inspected later, there was often a low grade osteitis due to attempts by the patient to remove desquamated epithelium and débris. This was because the blood supply of the skin was poor and therefore vulnerable. The cavity was larger when skin grafts had been employed and this was a disadvantage. Dr. Godsall's operation reduced the size of the cavity and this was an advantage.

Dr. E. Blashki (Sydney) said that he would try this operation. He had seen six patients shown by Bondi, of Vienna, in which Bárány's operation had been performed, which seemed similar to this operation. They had not all been successful. He split the posterior wall and packed back the two flaps so formed. Ruttin, of Vienna, stated that the Eustachian tube could not be closed for anatomical reasons and therefore he made no attempt to do so.

DR. ARTHUR MURPHY (Brisbane) said that the operation kept nearer to Nature's method and therefore seemed the best, but it required a considerable amount of dexterity

to perform it.

DR. A. WATKINS (Newcastle) had tried the operation twice since he had heard about it from Dr. Godsall. At first it had seemed wrong to him to leave the meatus intact, because he thought its inner end would cicatrize; he thought this because in cases complicated with brain abscess et cetera he had sometimes not completed the plastic part of the radical mastoid operation, but had packed the posterior cavity and two weeks later had cut the flaps. The inner part of the meatus had closed, but he realized that in Dr. Godsall's operation this did not happen, as the meatus was packed. When he had used flaps he always employed large ones and packed very tightly; the wound was usually slow in healing. In the two patients treated by the new method healing had been complete in five weeks. One minor drawback to the new method was that the ear could not be retracted by pulling it forward by a piece of gauze when the flaps had been cut. An advantage was that there was no risk of perichrondritis and that about twenty minutes were saved. He wondered whether the method would be suitable for patients with cholesteatoma. He always treated these conditions with great respect and found it difficult to keep the cavity perfectly clean after operation, as little crusts formed: when these were removed, there was often a tiny patch of cholesteatoma beneath them. Perhaps this had happened because he had been packing the skin too close to the bone. However, he thought that it would be dangerous to try Dr. Godsall's operation in the presence of cholesteatoma.

DR. G. A. EADIE (Melbourne) had seen three patients operated on at Golden Square Hospital in London in whom

flaps were not cut, and these had all experienced much pain in the after dressings. These operations had been the same as Dr. Godsall's except that a piece of rubber tube had been inserted into the meatus instead of 'gauze.

Dr. Eric Gutteridge (Melbourne) thought that the operation was a good one because it relieved the possibility of wax and epithelial débris accumulating in the cavity of the old operations. He had tried painting the edges of the flaps with 50% silver nitrate solution to prevent the formation of granulations. He asked whether the facial nerve ridge was taken as low in this operation as usual and what happened to the area between the tympanic ring and the labyrinthine wall.

Dr. H. M. Jay (Adelaide) considered that the ordinary radical operation often failed because of the large posterior cavity. In one patient in whom there was no disease of the mastoid bone, he had packed the meatus and had obtained early healing. He sometimes cauterized the Eustachian tube to procure healing. He asked Dr. Godsall if he had ever used muscle flaps to give support to a posterior part of the meatus in the early stages.

Dr. N. H. Meacle (Sydney) said that at Birmingham he had seen a large piece of the posterior meatal wall cut out instead of making flaps. Ruttin's patients often had a serous discharge from the Eustachian tube long after operation; it would be a great advantage to find a method to close it.

DR. GARNET HALLORAN (Sydney) had performed this operation three times. The advantages were that the time was shortened and the result was quite as good. But it was a drawback to have the head bandaged for six weeks instead of two.

Dr. Graham Brown (Brisbane) had performed this operation twice and liked it. The large number of flaps indicated that none was ideal. Heath had once used flaps, but had given them up. Jenkins, of London, performed the Schwartze operation, removed some of the posterior wall, hooked out the incus and tucked in a flap of periosteum instead of performing the radical operation. Kisch, of London, implanted a muscle flap from the temporal muscle in place of Jenkins's periosteum. Both these surgeons preserved the meatus. Dr. Godsall's opera-tion was midway between these operations and the radical one. When packing the meatus he thought that the inner part would be likely to expand and open out like a trumpet if packed too tightly. There should be no pain in dressing the flap region of an ordinary radical mastoid operation, but the pain was only in the region of the tympanic ring. He thought it a good idea to let the posterior cavity fill up as in this operation. He did not like skin grafting, as there was a danger of suppuration occurring beneath it.

Dr. Godsall in reply said that this was an endeavour to improve the old radical operation. He had first tried muscle flaps. Sometimes he had been obliged to remove them one or two weeks later, as they had become septic. After this he had returned to skin grafting at the time of operation. In regard to closing the Eustachian tube, it was he who had first asked this question, but he thought it best to spend time trying to get it as clean as possible at the time of operation. Fraser, of Edinburgh, admitted his inability to dry up the Eustachian suppuration in 10% to 15% of his patients. He ascribed the suppuration to infection from the tiny cells around the Eustachian tube which could not be removed. Replying to Dr. Sangster about closing the posterior wound he said that he liked his method because he could keep it open as long as he liked. The bone in chronic mastoiditis was not like that in acute mastoiditis, but was much more difficult to clear; sometimes he found it necessary to keep the posterior wound open for three months or longer. This could not be helped, as they did not choose their patients, but had to treat them as they found them.

Replying to Dr. Watkins he said that in patients with cholesteatoma his method was satisfactory because he could inspect the posterior cavity. He agreed that cholesteatoma was always dangerous because of the tunnels and recesses which had formed. He was able to inspect them with a magnifying glass by looking straight into the posterior wound; he cauterized them with pure carbolic. He kept the wound open until he was satisfied that it was perfectly clean. This generally took six weeks. With

regard to Dr. Gutteridge's question about the facial ridge, he lowered it as much as possible, in fact until he felt the next stroke would produce a twitch. Jenkins's operation was not the radical operation and so did not enter into the discussion. The meatal canal should be packed very lightly, because it tore easily and this destroyed the whole object of the operation.

SECTION OF DERMATOLOGY.

President's Address.

Dr. R. R. Wettenhall (Melbourne) in his address as President of the Section of Dermatology made reference to the practice of dermatology in its relationship to the British Medical Association and to medicine in general. He pointed out that dermatologists came into professional relationship with members of every specialty and he thought that each advance in medicine would be found to have some application in dermatology almost without exception. He thought that they could best further the efficiency of their own specialty and consequently its use to medicine in general by keeping their section as a definite part of the British Medical Association. The formation of branches of the British Association. The formation of branches of the British Association of Dermatology and Syphilology in New South Wales and Victoria should not interfere with this object. In meetings of the latter organization they would be able to deal with points of special interest to dermatologists, but when the opportunity arose, they should make their special knowledge available to other specialists and to the general medical practitioner. Such occasions did arise at clinical meetings at the various hospitals and in congresses. He thought that there was need for improvement in the teaching of dermatology and suggested that during the coming year this should be specially considered. They had reached a stage in dermatology when treatment was becoming the principal question. Radio-therapy had revolutionized the prognosis in skin diseases, but frequently this agent did not remove the cause of the disease. They were looking to biochemistry to help them in this connexion. The great effect through the nervous system of errors in metabolism was also important. In conclusion Dr. Wettenhall mentioned some conditions in the treatment of which success had been attained by methods not mentioned in text books.

Bucky's Grenzstrahlen in Dermatological Conditions.

Dr. R. C. E. Brode (Melbourne) read a paper on Grenzstrahlen in the treatment of dermatological conditions. He said that Grenzstrahlen had a wave length of the order of two Angström units. Bucky had held that the biological and clinical effects of these rays differentiated them from shorter wave length X rays on the one hand and much longer wave length ultra-violet rays on the other. It had been found that the first 0.4 millimetre of skin absorbed 50% of the Grenzstrahlen, at a depth of 0.8 millimetre only 25% remained and at the depth of the hair papillæ only 1% was left. The subcutaneous tissue was thus almost unaffected. Dr. Brodie described the apparatus in detail and gave particulars of seventy-four patients who had been treated for sixteen different types of dermatosis. He concluded that Grenzstrahlen had a definite value in dermatology, particularly when used in situations where there were delicate structures which might be damaged if X rays were used.

Dr. Herman Lawrence (Melbourne) was of opinion that the Grenzstrahlen were useful. He had applied these rays to some patches of keratosis solaris on the back of his own hand. A dense redness had been produced with irritability and peeling after treatment. The patch had been clear of opalescence under the Wood's light. Rodent ulcer of the eyelid had responded well to this treatment. It was also useful in pruritus and seborrhea.

Dr. E. H. Molesworth (Sydney) stated that Martinstein had criticized Bucky for stating that there was no danger in the use of these soft rays. He failed to see that treatment by this means was any better than by X rays.

Dr. J. H. Kelly (Melbourne) thought there was a small field for their use.

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Dr. Brodie in reply stated that he felt safer in the use of the *Grenzstrahlen* than with X rays, especially for lesions affecting the eyelid. He admitted that two of the deep-seated rodent ulcers treated had not responded to the treatment.

Gold Salts in the Treatment of Lupus Erythematosis.

Dr. John H. Kelly (Melbourne) made a report on the treatment of twenty patients suffering from lupus erythematosus with intravenous injection of gold sodium thiosulphate ("Sanocrysin") and "Krysolgan." The former drug had been given in doses varying from 0.025 to 0.1 gramme. A dose of 0.1 gramme was the maximum recomended for intravenous injection in the treatment of lupus erythematosus. "Krysolgan" was without appreciable effect until doses of 0.02, 0.04 and 0.1 gramme were given. After a dose of 0.1 gramme toxic effects were very frequently noted. Dr. Kelly concluded that the effect of these drugs was so remarkable that they should be regarded almost as specifics. Good results could be obtained from the use of comparatively small to moderate doses of these salts. Toxic symptoms with these doses were relatively infrequent and not severe. In view of the results obtained for this condition.

Dr. Langloh P. Johnston (Sydney) had treated twenty-five or twenty-six patients suffering from lupus erythematosus with gold-sodium thiosulphate. He had found that the results were generally good, although there was a certain amount of risk in the use of the drug as in one or two of the patients treated severe general symptoms had appeared after a dose of ten milligrammes.

DR. E. H. MOLESWORTH (Sydney) had refrained from using these salts. He stated that in 1927 Jadassohn and Martinsen had had some bad results after using this drug. Recurrences were the rule. In his opinion focal sepsis was the cause and the cause should be treated.

Dr. K. G. Colquhoun (Melbourne) reported that he had employed Schamberg's thiosulphate of gold and sodium in the treatment of lupus erythematosus in seventeen patients. In five complete cure had been effected, in two there had been no improvement, in two there had been definite improvement and in eight the treatment was being continued, considerable improvement having been attained. The dose for the first injection was twenty-five milligrammes; it had been increased to fifty, seventy-five and one hundred milligrammes at intervals of seven days. He had found that the best results had been obtained in the discoid form of the disease; long-standing lesions of large, indurated plaques also responded well. He stated that thiosulphate of gold and sodium represented the only treatment capable of curing lupus erythematosus completely.

Dr. J. J. W. Flenn (Sydney) looked upon the condition

Dr. J. J. W. Flynn (Sydney) looked upon the condition in a cosmetic light and did not think the use of a dangerous drug was warranted.

Dr. B. B. Barrack (Brisbane) had treated nine patients with gold-sodium thiosulphate. In two of the patients a good deal of pigmentation had developed around the lesion. It was of a bluish-brown tint, but later had cleared up. He generally used eight to twelve injections of 0.05 gramme each. In two patients the condition recurred which cleared again after eight more injections.

Dr. S. Shields (Melbourne) had had fairly good results without any toxic symptoms.

Dr. R. F. H. Makin (Adelaide) had treated two patients whose lesions had cleared up well.

Dr. Kelly in reply stated that Dr. Barber had changed his attitude in regard to the focal sepsis origin of lupus crythematosus. All existing septic foci had been removed from his patients without any improvement before the gold treatment was instituted.

SECTION OF RADIOLOGY AND MEDICAL ELECTRICITY.

President's Address.

Dr. H. M. Hewlett (Melbourne), in his address as President of the Section of Radiology and Medical Elec-

tricity, traced the advances which had been made in radiological equipment since he had first undertaken the practice of the specialty. He said that three improvements stood out in relief against all the others. These were the Snook transformer, the Coolidge tube and the Potter-Bucky diaphragm. Dr. Hewlett then proceeded to discuss the relationship of the radiologist to the general practitioner. He enumerated the types of con-ditions from which patients who were referred usually suffered and emphasized the necessity for supplying the radiologist with a complete history of the patient's illness. He thought that when abnormal conditions of the lung were found, a reexamination should be made in from six to eight weeks. This was of special importance in unresolved pneumonic consolidations. In discussing the status of radiologists, Dr. Hewlett laid emphasis on the necessity for a training in general practice before the practice of radiology was entered upon. The greater the knowledge of the radiologist in anatomy, physiology, pathology and general clinical medicine, the better radiologist would he be and the more would he be able to command the respect of his medical and surgical colleagues. In conclusion he spoke of the tendency displayed in America for radiological laboratories to be conducted non-medical technicians. He said that medical practitioners should definitely oppose any such movement.

Auto-Condensation in the Treatment of High Blood Pressure.

Dr. E. PAYTEN DABK (Katoomba) read a paper on autocondensation in the treatment of high blood pressure. For the production of auto-condensation a modern diathermy machine capable of giving a heavy current and an autocondensation cushion were needed. When the current was turned on, the patient's body became charged with electricity by induction and acted as the second plate of a The physiological effects of diathermy applied condenser. through the auto-condensation cushion were practically the same as those of general diathermy, except that with the same amperage the heating effect was slightly less, while the power to cause a fall in blood pressure was slightly more. Dr. Dark reported results of experiments in which he had reduced the systolic and diastolic blood pressures in one instance from 125 and 80 millimetres of mercury respectively to 120 and 75 millimetres. In other instances the reduction had been from 125 and 80 to 118 and 73 millimetres and from 118 and 75 to 108 and 70 millimetres and in a fourth instance from 115 and 75 to 104 and 68 millimetres. Dr. Dark emphasized the difference between hyperpiesia and hypertension. piesia, provided the cause could be found and removed, auto-condensation should help to a complete cure. He gave the details of the current required and of the length of exposures. On an average each exposure would cause an immediate fall in the systolic blood pressure of from ten to thirty millimetres of mercury. From this there would be a gradual rise and at the end of twenty-four hours the reading would be about five millimetres less than it had been before the exposure. Each session should produce a more or less permanent reduction of five millimetres of mercury pressure. For the treatment of hypertension no general rule as to length of exposure or amount of current could be given, since the treatment had to be adjusted to the needs of every individual patient. It was necessary to proceed carefully on account of the structural damage which was present in the heart, the arteries and the kidneys. While Dr. Dark did not claim that this method would be a success in every instance, he felt convinced that every opportunity should be taken of investigating it so that its real worth might be finally established.

Dr. Donald I. R. Smith (Perth) uttered an earnest warning against the danger of allowing quacks and unorthodox practitioners to usurp the function of the medical profession in regard to the administration of physiotherapy. In Perth they found that this treatment was being carried out by others than qualified practitioners.

Dr. K. A. Piper (Tamworth) pointed out that in some of the country towns of New South Wales unqualified men

had commenced this type of work and he thought there was grave danger that members of the profession would encourage them either directly or indirectly.

Dr. H. H. Appleby (Adelaide) said that his experience with the use of auto-condensation agreed very largely with that of Dr. Dark, but he thought the results obtained were on the whole improved if general ultra-violet light treatment was administered at the same time. In some cases he had found that the use of the Tesla coil caused a reduction in the blood pressure, whereas auto-condensation administered by the ordinary diathermy machine caused an elevation in the blood pressure.

Dr. B. J. M. HARRISON (Sydney) stated that his experience in these cases was similar to that of Dr. Dark. He uttered a warning against over dosage entailing too great a fall in the diastolic pressure. If these patients were not closely watched during the first few treatments, occasionally it would be found that the fall in diastolic pressure was sufficiently great to cause starvation of the heart muscle, with a resulting attack of angina. occurred in one of his earlier patients, when the diastolic pressure had dropped after ten minutes' treatment from 165 to 110 millimetres of mercury. This particular patient had to be very carefully watched during all subsequent treatments, but the final result had been very satisfactory, the pressures having been reduced from 165 diastolic and 250 systolic to 110 diastolic and 170 systolic. He confessed his inability to arrive at a satisfactory conclusion as to the mode of action of this treatment, but wished to draw attention to the fact that electrical currents in case of accidental electrical injuries caused their maximum damage to the blood vessels, probably as a result of the column of liquid in the blood vessels acting as an excellent conductor. The generation of heat which was a usual accompaniment of any form of diathermy, he considered to be an end result of the biophysical changes produced in the tissues by the altered electrical condition. Referring to the use of physio-therapy by unqualified individuals he pointed out that the members of the profession in Sydney were apparently unaware of the fact that several legally registered medical practitioners were available for the purpose. One patient had made inquiries from a firm dealing in electro-medical equipment concerning the names

and had then asked his medical attendant to call one of the practitioners whose names had been given to him.

Dr. H. M. Hewlett expressed his opinion that quacks

of men who were capable of administering physio-therapy

should be repressed by law.

Dr. Dark, replying, pointed out that if medical practitioners did not use physio-therapy, quacks would. He had no personal experience of the Tesla coil, but had not seen a patient in whom a reduction in blood pressure had not followed careful treatment along the lines he had laid down.

Diverticulum of the Duodenum.

Dr. H. A. McCoy (Adelaide) read a paper on diverticulum of the duodenum. He said that during the previous four years, in the course of making 590 gastro-duodenal radiological investigations, he had been able to demonstrate duodenal pouches in four instances. This represented an incidence of 0.7% among persons who were suspected on clinical grounds of having an organic lesion in the stomach or duodenum. In one patient two diverticula had been found, a large pouch in the third stage of the duodenum associated with a smaller pouch rising from the second stage. He pointed out that there was no symptom complex by which the lesion could be recognized clinically. often produced no symptoms and the greatest difficulty in discovering it occurred when the orifice of the pouch was comparatively large. The chief complication was diverticulitis and this might call for urgent surgical inter-It was not possible to determine by radiological means whether diverticulitis was present, but information useful to the clinician might result from knowledge of the length of time of retention of the contents of the sac.

DB. H. M. CUTLER (Sydney) demonstrated a skiagram of a gall-bladder filled with barium from the duodenum, which he had come across in hospital practice. He subsequently

ascertained that it was due to operative interference. He demonstrated another skiagram illustrating a similar condition not due to operation. His third skiagram revealed a diverticulum from the second part of the duodenum and his fourth a diverticulum from the third part of the duodenum. He emphasized his opinion that there was no symptom complex common to duodenal diverticula.

DE. W. A. EDWARDS (Sydney) demonstrated three skiagrams of diverticula from the second part of the duodenum. He pointed out that surgeons often found an ulcer of the first part of the duodenum when there was a diverticulum in this section and that sometimes when the cap appeared to be deformed on the screen, the surgeon was able to demonstrate at operation a condition of diverticulosis.

Dr. K. S. Cross (Melbourne) exhibited several diagrams of diverticula from the under aspect of the duodenal bulb, explaining the progressive stages in the development of the diverticulum from the earliest, in which a longitudinal spasm of the bulb associated with ulcer could be seen through a process of shutting off a part of the greater curvature, to the stage in which only a large loose dependent diverticulum with a vertical neck reaching the greater curvature of the bulb could be seen. He explained that he had a complete series of skiagrams demonstrating that this was a mode of formation of diverticula.

Dr. J. O'Sullivan (Melbourne) thought that the origin of these diverticula could be traced to stasis, due to spasm associated with intrinsic disease, such as ulceration, or extrinsic disease, such as a lesion of the gall-bladder, but it might also occur in duodenal ileus when the duodenum remained filled long beyond normal period.

Dr. W. B. Dight (Sydney) referred to a patient in whom a dilatation of the whole of the stomach and duodenum had been demonstrated with a distinct eight hour residue. Complete evacuation had taken place after four hours, when the patient was placed in different positions so as to facilitate the mechanical emptying of the stomach and duodenum. He referred to a similar condition which he had seen on Dr. Gordon Craig's behalf.

Dr. H. M. Hewlett (Melbourne) pointed out that in his experience he had never seen a duodenal diverticulum in association with a ptotic stomach. He had been struck by the absence of a symptom complex common to these conditions.

Dr. McCoy in reply suggested that the appearance of a pouch on the greater curvature was due to the position in which the picture was taken. It sometimes happened that, when the pictures were taken in the vertical position, the diverticulum filled with barium could be seen on the greater curvature aspect of the second part of the duodenum. If skiagrams were then taken with the patient in the prone position, the stalk of the diverticulum could be seen to enter the duodenum on its concave aspect. As to the origin of these diverticula he thought that many of them were congenital, arising from buds which failed to become obliterated.

Grenzstrahlen.

DR. HERMAN LAWBENCE (Melbourne) read a paper on the treatment of superficial growths of the skin by Grenzstrahlen, radium et cetera. He referred to a paper by himself and Dr. Brodie which would be published in The Medical Jouenal of Australia on September 7, 1929. He had found that Grenzstrahlen as obtained by the use of Bucky's apparatus for generating them and Bucky's special tube for their application, were of special and particular value in the treatment of certain conditions. It had to be remembered that these rays were of the order of 1-6 to 2-0 Angström units and that their penetration was limited to two millimetres of tissue substance. They could therefore be used only in superficial conditions. Dr. Lawrence then discussed the application of these rays to verruea sentils, keratosis senilis and keratosis solaris.

Dr. K. A. Piper (Tamworth) stated that he had treated some five hundred patients for hyperkeratosis, prerodent and rodent ulcers with the unipolar method and sometimes with bipolar method with fulguration. The results of treatment had been very satisfactory and the cosmetic

results for the more superficial conditions had been excellent. For deeper lesions the use of the needle was sometimes followed by the development of a keloid in the scar. He had found that when scabs were allowed to form, with the development of pus beneath, the patients were more prone to keloid. He thought that sepsis was probably responsible for this complication. Since he had taken care to keep the lesions free from scab or pus, he had found no evidence of keloid development. Some small keloids had been successfully treated with diathermy.

Dr. R. R. Wettenhall (Melbourne) said that Grenzstrahlen were of value in those conditions which responded to X rays without the need of penetrating rays. His experience with Grenzstrahlen had been very satisfactory. He thought that hyperkeratoses were caused by drying of the skin due to the rapid and repeated evaporation of sweat in an atmosphere with a constantly low humidity. He cited the case of a nightwatchman who had been exposed in a very dry climate to wind, but no daylight for twenty years; a rodent ulcer had appeared on each eyelid. This indicated that it was the dryness rather than the sunlight which was the possible cause of these lesions.

Dr. A. C. Arnold (Newcastle) thought that a sphere of usefulness existed for Grenzstrahlen, but pointed out the danger of this method of treatment being allowed to fall into the hands of quacks. In Newcastle it was a practice for medical practitioners to send their skin patients direct to radiologists. This system was wrong. He had known people with tertiary syphilis to be sent for treatment for rodent ulcers. In his opinion these patients should be sent directly to the dermatologists. Treatment of deep lesions by Grenzstrahlen was a source of danger in that only the superficial portions could be affected by the treatment and the deeper portions continued to spread. He thought the drying winds were the source of hyperkeratoses. In his experience these lesions occurred on the dry plains more frequently than on the moister coast, that labourers in the coastal districts who worked and sweated in the sun were less frequently affected than those engaged in pastoral industries, perhaps equally exposed to the sun, but in addition exposed to the drying winds.

DR. H. W. WILSON (Auckland) pointed out in New Zealand many more rodent ulcers occurred relatively than in England. The atmosphere in New Zealand was very humid, but winds were continuous and severe. He, too, thought that the origin of these conditions of hyperkeratosis could be found in an increase in the evaporation taking place in the skin.

Dr. H. M. CUTLER (Sydney) compared the Grenzstrahlen with the very soft X rays that were first used in radiation treatment. He pointed out that the conditions in which Grenzstrahlen secured favourable results, were just those conditions which responded most favourably to the soft rays that were formerly in use, conditions which still yielded best results when long wave length X rays were These very soft X rays were concerned when secondary radiation was induced in rodent ulcers by painting them with a 2% solution of potassium fluorescein. Results could be obtained in this way if a kilovoltage of 100 and administering 0.5 Benoist unit as a dose were used. He had had experience of a rodent ulcer treated by this method responding satisfactorily to this relatively small dose after having failed to respond to the larger doses usually applied. For hyperkeratoses he thought the best method of treatment was the diathermic needle followed by X rays.

DR. H. M. Hewlett (Melbourne) pointed out that synovial cysts and their narrow connexions with the joint spaces could not be visualized by X rays.

In reply Dr. Lawrence spoke of a girl who presented herself to him with a rash on both cheeks giving at first glance a typical picture of lupus erythematosus. He had been uncertain of the exact diagnosis until he had found that the lesions were caused by frequently rubbing spittle on the parts. Diathermy occupied the first place in the treatment of some of these conditions, but the particular treatment best adapted to any particular condition should be carefully considered beforehand. He emphasized the

difference between the true keloid which extended beyond the scar and the hypertrophic cicatrix which did not extend beyond the scar; the latter could be excised with safety, while the former frequently recurred after excision. It appeared that the tendency to true keloid formation was an idiosyncrasy. Grenzstrahlen were very safe and very simple; the cost of installation was about £120. equipment should be installed by the dermatologist before he invested in a supply of radium or in an X ray equipment. Deep rodent ulcers extending downwards for six millimetres could be treated in a number of different sessions, successive applications affecting deeper and deeper layers until the whole thickness of the ulcer had been treated. True epitheliomata should be excised. but rodent ulcers, nævi and painful nodules could be treated by this method.

Primary Bone Sarcoma.

PROFESSOR E. F. D'ATH (Dunedin) expressed the opinion that the only acceptable classification of primary malignant tumours of bone was one based on that of the Codman He distinguished osteogenic sarcoma, Ewing's endothelioma and myeloma. Osteogenic sarcoma meant a tumour derived from the ancestors of cells which when duly differentiated were known as osteoblasts. An osteogenic sarcoma therefore was not necessarily a bone producing tumour. Professor D'Ath discussed the subject from his own experience of sixty-five examples of destructive primary tumours of bone. They included forty-three osteogenic sarcomata, fourteen benign giant cell tumours, three myelomata, three Ewing's endotheliomata, one angioendothelioma and one extraperiosteal sarcoma. He mentioned the suggestion that the osteogenic sarcomata should be subdivided into four groups, the periosteal, the medullary and subperiosteal, the sclerosing and the telangiectatic. In regard to the two first mentioned, he stated that there was no way of determining precisely the origin of the tumour. In regard to the other two, they represented merely extreme stages of differentiation. Osteogenic sarcoma was a disease of the second and third decades. In thirty-two of the tumours examined the site was the knee region. Five of the tumours involved the humerus. It was essentially a solitary tumour, except when it supervened on osteitis deformans, when it was often multiple. Coincident with the continuous destruction of bone, there was a reaction of the periosteum consisting in the formation of new bone at the outer surface of the involved area. Eventually the tumour stripped up the periosteum. The only bar to this was the attachment of the periosteum to the cartilage. This led to the production of a fusiform enlargement. The characteristic lipping of a fusiform enlargement. The characteristic lipping was caused by the encroachment of the newly formed periosteal bone except at its margin. After the tumour had perforated the periosteum, the malignant process, freed from restraint, infiltrated and pushed aside the adjacent soft structure and formed a bulky tumour often connected with the subperiosteal portion by a narrow neck.

Turning to the histological picture Professor D'Ath pointed out that the type cell of the tumour was the spindle cell. Small spindle cells, large spindle cells and polyhedral cells occurred in any given tumour. The nuclei usually manifested hyperchromatism and numerous mitotic figures were seen. In the differentiation of the tumour the intercellular substance underwent myxomatous, fibrous, cartila-The blood cells were ginous and osseous changes. abundant; they included vessels belonging to the normal bone that had been invaded and vessels that belonged to the tumour itself. Metastases occurred in the lungs, the abdomen, other bones and the brain in that order They tended to be less differentiated than of frequency. the original growth. Tumour giant cells and giant cells of foreign body and epulis type were encountered in osteogenic sarcoma. The diagnosis of these tumours was very difficult and he claimed that the pathologist should have full clinical and radiological information at his disposal. There was a well founded objection to the removal of a piece of the growth for histological examination. incision might liberate the tumour from the restraining influence of the periosteum. The prognosis was grave.

Myelomata were rare tumours. They were characterized by their multiplicity and their special predilection for the ribs, sternum, clavicle and the middle portion of the long bones. It was a disease of late life. The tumour tended to form nodules which expanded the bone and eroded it in a more or less circumscribed fashion until the periosteum was reached. The reaction in the periosteum was a destructive one. Myelomata were composed of plasma-like cells with small, typical eccentric nuclei. The normal cells of bone marrow, myelocytes, lymphocytes and erythroblasts, were less numerous than the plasma-like cells. The diagnosis in the early stages depended on radiological examination. The prognosis was unfavourable.

Ewing's tumour was a disease of childhood and early adolescence. Common sites were the skull, vertebræ, the clavicle and the shaft of the tibia and fibula. The constituent cells were small polyhedral cells with oval nucleus and scanty cytoplasm. Intercellular substance was absent. Ewing's tumours gave rise to metastases in lymphatic glands and in other bones. The origin of the tumours was uncertain. They responded well to radiation and this was a useful diagnostic differentiation from osteogenic sarcoma.

Professor D'Ath described two tumours that could not be classified under the usual headings. The first appeared to be an extraperiosteal sarcoma of Kolodny or a periosteal fibrosarcoma of Ewing. The second seemed to correspond to the angioendotheliomata. In the next place he spoke of the osteoclastomata or giant cell tumours. They were benign, occurred in elderly persons with osteits fibrosa, after infection or after insufficient curettage. In conclusion he discussed the relation of trauma to tumour formation and came to the conclusion that trauma was more often a prominent feature in the history of the bone sarcomata than in that of other bone tumours. The most probable explanation of how trauma led to osteogenic sarcoma was that the repair restraint was lost. This meant that there was an unbridled and purposeless proliferation of the mesoblastic elements whose physiological functions were regeneration and repair.

SIR HENRY NEWLAND (Adelaide) reported two cases of myeloid sarcoma of bone. In one instance the growth had occupied practically the whole of the head of the tibia. Treatment had consisted in curettage. Microscopical examination revealed the typical structure of myeloid sarcoma. In the second instance the growth had occurred in the external condyle of the femur and the shell of bone had fractured into the knee joint. Treatment had consisted in curettage and after this the limb had been placed in plaster of Paris. A guarded prognosis had been given. Subsequently the growth had extended and further operation had been undertaken. The external condyle and a portion of the diaphysis had been excised and a bone graft, cut from the crest of the tibia on the same side, had been thrust upwards into the cavity of the femur and the lower end had been inserted into a channel in the head of the tibia. This operation had been carried out on February 14, 1929, but so far no bony union had occurred. The opinion of members of the section was asked in regard to further treatment.

Dr. Alan Newton (Melbourne) read a paper in which he reported four cases of giant-celled tumour of bone. In two instances the growth had been in the lower end of the radius. In one the great trochanter of the femur had been involved and in the fourth instance the growth had occurred in the lower end of the tibia. In the two cases in which the radius was affected, the treatment adopted had been resection of the lower end of the bone and transplantation of the head of the fibula. In one instance the functional result was very good and only slight radial displacement was present. In the other the functional result was good, but radial displacement was more pronounced. The tumour in the great trochanter had been satisfactorily treated by curettage. The growth in the tibia had been curetted and a recurrence had been satisfactorily treated by radiation therapy. This result was interesting in view of Kolodny's statement that radiation therapy was disappointing when applied to recurrence after curettage. Dr. Newton said that the treatment of

giant-celled tumour of bone had progressively become less radical. He would advise radiation therapy in preference to operation. If this treatment were successful, the result would be far superior to that obtained by surgery. When radiation failed, operation was still available.

Dr. J. STANLEY VERCO (Adelaide) read a paper on the subject of bone sarcoma. He adopted the classification of Kolodny. He said that in order to read and interpret correctly a skiagram of a bone tumour, a thorough knowledge of the gross pathology was necessary. The X ray features of an osteogenic sarcoma depended greatly on the stage of the clinical course and upon the structural peculiarities of the tumour. If malignant disease of bone was suspected, most of the bones of the skeleton should be examined with X rays. The important radiological features were the following: Absence of the limitation of the tumour, slight expansion of bone, destruction of bone, lipping of the periosteum, a fan-like or sunray appearance of the edges of the bone, the appearance of the shaft of the old bone traversing the tumour, the location of the tumour, a spindle-shaped tumour, possible irregularity of density of the tumour due to cartilage, mucoid material and bone irregularly developed. Although the radiological features were important, it would be misleading to conreatures were important, it would be misleading to consider them as pathognomonic. In Ewing's sarcoma the tumour cells spread rapidly between the bone laminæ which they separated and pushed apart. This had the effect of making the bone appear in a skiagram to be thicker than normal, as if it were edematous. At a very early stage the bone appeared as if it were affected by osteomyelitis. In all skeletal tumours, but especially in Ewing's sarcoma, it was erroneous to try to base a diagnosis on either a radiological or a histological exam-No other skeletal lesion responded so ination alone. rapidly to radiation as Ewing's sarcoma and this effect was so pronounced that it offered help in diagnosis; owing was so produced that it othered help in diagnosis; owing to the danger of exploratory incision a therapeutic radiation test should be adopted if the presence of Ewing's sarcoma was suspected. After short reference to angioendothelioma and extraperiosteal sarcoma under the heading of unclassified sarcomata, Dr. Verco discussed myeloma or myelomatosis. He said that the skiagram revealed definitely circumscribed areas of diminished density. characteristic appearances, however, might be obscured by frequent infarction or pathological fractures and these might present diagnostic difficulties. In giant-celled tumour there was a characteristic bulky spherical shadow with a multicystic appearance as a result of osseous trabecula-tion at the periphery. The shaft of the bone was absent and it appeared as if the cortex was blown out from within the medullary cavity so as to form the thin bone shell which sharply limited the tumour from the surrounding tissues. Beyond the tumour the cortex and periosteum were entirely unaffected and no periosteal lipping was seen. In conclusion Dr. Verco described the appearances which followed radiation and issued a warning against the danger of overradiation used for purposes of treatment.

SIR HENRY NEWLAND demonstrated a full set of skiagrams of a patient with generalized osteitis deformans, a young man, the bowing of whose legs was so pronounced that his knees were sixty centimetres (two feet) apart.

Dr. E. S. J. King (Melbourne) remarked that some bone sarcomata were difficult to distinguish from true carcinoma. During the last twelve months he had seen six bone growths diagnosed as sarcoma, which at biopsy or autopsy all proved to be carcinoma. Sometimes as in the kidney the primary carcinoma was followed by the development of only one secondary metastasis. When this solitary metastasis occurred in the bone, it could easily be mistaken for a sarcoma. Some bone tumours, even of a very malignant type, contained glant cells. Many tumours arising in long bones diagnosed as giant-celled tumours, gave rise to a metastasis at a distance. It was apparently impossible to differentiate accurately between the benign and the malign type of giant-celled bone tumours.

PROFESSOR D. A. Welsh (Sydney) thought that the difficulty of diagnosis of bone sarcomata affected their relation to other malignant tumours. He considered that giant-celled tumours were easy to recognize and were a

class apart. Osteogenic tumours were easy to recognize when there was much differentiation. They sometimes reminded him of gliomata because of the different stages of differentiation. In the early stages a diagnosis was difficult. One helpful factor, upon which the pathologist would have to rely, was the future history of the patients. It appeared that trauma instead of causing a lesion, sometimes served only to reveal the presence of a pre-existing tumour. It was sometimes difficult to differentiate microscopically osteogenic forms from myelomata. He had had much difficulty in distinguishing tumours from normal reactions of bony tissue which were not really tumours. This was seen especially in Paget's diease, Ewing's tumour and inflammatory reactions. To arrive at any concrete results team work was essential; the surgeon, the radiologist and the pathologist must work hand in hand.

Dr. B. J. Harrison (Sydney) remarked that in a series of twelve bone sarcomata five were of the osteogenic type, one was a Ewing's tumour and the remaining six were myelomata. Of the patients with osteogenic tumour one was still perfectly well. The patient with Ewing's tumour had responded symptomatically at least, but he had recently been informed that the patient was showing clinical evidence of distant metastasis. The other patients were alive and well. One giant-celled tumour deserved special mention because when the original growth in the lower end of the femur had been progressing satisfactorily under deep X ray therapy, the patient had injured her knee. The injury had been followed almost immediately by the development of a second similar tumour in the adjacent part of the upper end of the tibia. All these patients had been treated by deep X ray therapy.

Dr. H. M. Hewlett (Melbourne) called attention to Dr. McCoy's collection of skiagrams which were mounted on a large illuminating stand so as to present the appearance of a skiagram of the whole patient. The condition was Paget's disease and the varying degrees to which the different bones were affected, was beautifully demonstrated. The lining membranes of the bony cavities in Paget's disease had a distinct relation to giant-celled tumours. Any operative interference either for biopsy or for treatment or the onset of infection altered the histological picture and increased the difficulty of microscopical diagnosis. It sometimes occurred that a tumour had hemoglobin in its cells and this made the differential diagnosis from the histological picture very difficult.

SECTION OF ANÆSTHETICS.

President's Address.

Dr. Gilbert Brown (Adelaide) in his address as President of the Section of Anæsthetics began by expressing his satisfaction at the creation of a section of anæsthetics and welcomed to Australia Dr. Frank H. McMechan, of Avon Lake, Ohio, who, he said, had done more than any other man to organize the anæsthetists of the world. He chose as the subject of his remarks anesthesia in relation to lung disease. The presence of lung disease in a patient who had to be anæsthetized, was one of the common problems that confronted the anæsthetist. In order to prevent disastrous results it should be remembered that an anæsthetic in these circumstances should give a pleasant and rapid induction without any respiratory irritation or much alteration in blood pressure; it should allow anæsthesia to be maintained for operations of variable duration and should insure adequate oxygenation and permit a rapid recovery without unpleasant sequelæ. Chloroform was pleasant and unirritating, but was toxic and had a high mortality when compared with most other drugs. It was suitable only compared with most other drugs. It was suitable only when better methods were unavailable. Chloroform-ether mixtures were sometimes used, but had the disadvantages of both drugs and might be followed by exacerbation of the lung condition. Ether was irritating and should never be used by the closed method. In chronic lung conditions it might sometimes be used by the open or by the endotracheal method. He had seen the use of the colonic oilether method followed by pneumonia. Ethyl chloride given by the open method was fairly safe, but he had seen an exacerbation of pulmonary tuberculosis following its administration for dental extraction. Spinal anæsthesia might be used for operations on the lower half of the body, but was contraindicated in tuberculosis. "Avertin" held out good hopes as an anæsthetic in lung disease, but he had not had the opportunity of using it. Nitrous oxide and oxygen and ethylene and oxygen fulfilled the conditions laid down as essential for anæsthetics in lung disease. The new surgical treatment of pulmonary tuberculosis by thoracoplasty and avulsion of the phrenic nerve provided a difficult task for the anæsthetist. Dr. Brown illustrated his remarks throughout by short accounts of his clinical experience.

Dr. M. C. Lidwill (Sydney) remarked on Dr. Gilbert Brown's wide experience in anæsthesia for thoracoplasty. While Dr. Brown condemned ether, his own experience of a considerable number of patients with pulmonary tuberculosis and other diseases of the lung had led him to believe that ether had made little difference to these conditions. In support of this statement he stated that when the patient with a lung full of pus had had anæsthesia induced as many as four or five times in a fortnight, no ill effects had resulted. "Avertin," he thought, might eventually prove itself to be the best anæsthetic in these conditions, to be given preferably in small doses and aided by a small dose of ether, nitrous oxide and oxygen or ethylene and oxygen. He pointed out that in lung disease it was most essential to give an adequate supply of oxygen and he felt that nitrous oxide and oxygen was lacking in this respect. Ether administered by the intratracheal method in hydatid disease of the lung or in bronchiectasis gave no trouble. The great factor to be remembered in all anæsthetics was that the basal metabolism was greatly reduced and in lung conditions the patient was very liable to be chilled. At the Royal Prince Alfred Hospital an outbreak of post-anæsthetic pneumonia had occurred and had been attributed to patients having been allowed to walk about insufficiently clad. This had been remedied. It was necessary to keep patients suffering from lung disease warmly clad to avoid any post-operative complications. Dr. Lidwill asked Dr. Gilbert Brown how he would manage in a patient undergoing bronchoscopy for a foreign body in the respiratory tract.

Dr. F. H. McMechan (Ohio) remarked that the one yard stick for measuring results in the surgery of lung conditions was the end result. In America where there was a large amount of pulmonary tuberculosis, medical men had withdrawn their patients from operative treatment on account of the excessive death rate. By this he meant not the immediate death rate during or following anæsthesia, but the ultimate result of the use of ether. On the other hand, the same practitioners were submitting their patients to operation since the advent of the gas anæsthesia, which protected the lung tissue from damage. Ether had been responsible for the major part of the death rate among many patients subjected to thoracoplasty. Regional anæsthesia had accounted for very many recoveries, while the number of eventual recoveries to health and activity following the uses of gas was astounding. In one series only two out of four hundred patients had died. The probable factors which accounted for the use of ether in Australia were that the climatic conditions were not so severe in Australia as in America and that pulmonary tuberculosis was not so severe as in America. Incidentally McGill, of London, had turned to intratracheal gas anæsthesia for operations for diseases of, the lung and his success had been remarkable.

DR. R. W. HORNABROOK (Melbourne) referred to Dr. Lidwill's remarks on "Avertin." Shipway had stated that "Avertin" was likely to prove of great value as an induction agent if given with great care. But he had advised that it should not be given as an anæsthetic per se, but as an adjuvant. Dr. Hornabrook did not appreciate rectal anæsthesia, as he did not feel that he was in complete control of his patient. He was unable to speak of nitrous oxide and oxygen, but thirty years previously he had given nitrous oxide and air.

Dr. L. S. Lowenthal (Sydney) supported Dr. Gilbert Brown in his remarks on the value of gas anæsthesia in lung conditions. He referred to the results obtained with patients at the Royal Prince Alfred Hospital, who had had the operation of thoracotomy performed on them while suffering from active pneumonia.

Dr. J. J. C. Lamrock (Sydney) asked if the patient was more liable to hæmorrhage with ethylene and oxygen anæsthesia and if so, whether it would be advisable to adopt prophylactic measures.

Dr. B. R. Hallows (Melbourne) spoke of the advantages of ethylene and oxygen and based his remarks on an experience of between three and four hundred patients.

Dr. O. Ellis Murphy (Brisbane) was of the opinion that gas anæsthesia was the best in pulmonary disease and did not agree with Dr. Lidwill in his remarks on the insufficiency of oxygen in nitrous oxide and oxygen anæsthesia. He thought that the supply of oxygen was always adequate and readily available.

Dr. Gilbert Brown in his reply told Dr. Lidwill that he had not attempted to induce gas anæsthesia for bronchoscopy and would not like to do so. He did not like rectal anæsthesia, but in patients undergoing bronchoscopy he thought that it might be the best anæsthetic. He did think that there was much more hæmorrhage with ethylene than with ether, but if there was, it ceased very quickly.

Surgical Risk.

DR. F. H. McMechan (Ohio) dealt with the evaluation of surgical risk. He pointed out that the International Anæsthesia Research Society had established certain essentials of safety first for its uniform anæsthesia record. They were the determination of the surgical risk before operation, five minute blood pressure guides and remedial therapy and after-care based on the degree of circulatory depression. He explained the system of classification of persons prior to operation into groups according to the risk of death under anæsthesia. Height, weight and age were important factors. The nature, length and conditions of the operation also modified the risk. The state of the patient's health was also important. In order to evaluate the risk it was necessary to ascertain the respiratory index. One method of determining the respiratory function was to apply the breath-holding test. A normal person could hold his breath under standard conditions for fortyfive seconds or longer. If the patient could not hold his breath for more than twenty-five seconds it was doubtful whether he could stand the operation; if the time were reduced to ten seconds, the operation would prove fatal to the patient. The breath-holding time bore a relationship to the vital capacity and to the flow of blood through the heart. Dr. McMechan advised a simultaneous record of the respiratory and the pulse rates. In the next place the basal metabolic rate should be determined and if found to be high, measures should be adopted to reduce it to normal before the operation. The Cornell test for the detection of incipient nephritis should also be applied. This test consisted in counting the pulse and respiration rate before and after the patient touched his toes twenty times. If the rates rose abruptly and returned after the lapse of a considerable time, the patient's renal function was impaired. Normally the pulse rate returned within two minutes to the normal rate and the respirations within eight minutes. Moot's circulatory index and the determination of the energy index were essential in estimating the risk of the patient during a surgical operation. It was further advisable to ascertain whether or not the patient was of the vagotonic type. Examination of the blood was of the vagotonic type. Examination of the blood and urine also revealed information of importance. Dr. McMechan claimed that when these investigations were undertaken in a routine manner before any patient was subjected to anæsthesia, the death rate was materially diminished. He also advocated the expedient of charting the patient's vital reserve during the operation. up as a formula that a 15% increase in the pulse rate without increase in blood pressure was safe, as was a 10% decrease in blood pressure without a decrease in the pulse rate. Danger was indicated when there was a 25% increase in the pulse rate and from 10% to 25% decrease in the blood pressure. The indications of shock were a pulse rate of 100 rising with a progressively falling blood pressure, which reached a systolic pressure of eighty millimetres of mercury and a pulse pressure of twenty millimetres or less. If shock continued for thirty minutes or more during an operation, without effectual remedies being applied, death was almost inevitable in from twenty-four to seventy-two hours.

Dr. Gilbert Brown (Adelaide) remarked that the anæsthetist often saw the patient for the first time on the operating table, possibly under the influence of the narcotic and perhaps only after a perfunctory examination had been made by another practitioner. He recommended a thorough examination of the patient and advocated the tests which Dr. McMechan had spoken of. He demonstrated by lantern slide some of these tests and the manner in which they revealed information concerning certain patients to whom anæsthetic had been given. He thought that the most important tests that should be applied were Moot's test for evaluating cardiac reserve, the energy index test, the breath holding test and Read's test for estimating the basal metabolic rate. Attention was drawn to McKesson's rule that after thirty minutes of sustained low blood pressure and rapid pulse almost every patient succumbed to surgical shock and heart exhaustion either shortly or within three days.

Dr. R. W. Hornabrook (Melbourne) discussed the

DR. R. W. HORNABROOK (Melbourne) discussed the question of premedication by morphine and atropine, stating that he had conducted a series of observations with these drugs in varying doses from 0.015 gramme of morphine and 0.0006 gramme of atropine down to 0.01 gramme of morphine and 0.0005 gramme of atropine, 0.0075 gramme of morphine and 0.0004 gramme of atropine, 0.005 gramme of morphine and 0.0003 gramme of atropine; he had found that morphine was not a depressant in small doses; in fact it would stimulate peristalsis, but in larger doses would give rise to distension of the bowel. He would not give an anæsthetic without the preliminary injection of morphine and atropine.

Dr. F. L. Davies (Melbourne) disagreed with the remarks of Dr. Hornabrook. He held that it was unnecessary to give morphine or atropine. Morphine depressed the respiratory centre, while it did not aid induction. Atropine did not stop salivation, which was more often caused by excessive carbon dioxide and insufficient airway or any overconcentration of ether.

DR. G. KAYE (Melbourne) compared the statistics of two hospitals in one of which morphine and atropine premedication was given, while in the other no premedication was given. There was no difference in the death rate.

Dr. M. C. Lidwill (Sydney) and Dr. H. Hunter (Sydney) expressed the same opinion as Dr. F. Davies.

In his reply Dr. F. McMechan stated that his remarks on morphine and atropine premedication applied only to their action on the metabolism and not from the point of view of the speakers of the discussion. Dr. H. Hunter had said that after hearing Dr. McMechan's paper he felt that his knowledge of anæsthesia was small; Dr. McMechan stated that a student knew little and each year there was much more to learn. The day would never come when they would be able to say that they knew much about anæsthesia.

Endotracheal Anæsthesia.

Dr. M. Kasner Moss (Perth) read a paper on endotracheal anæsthesia. He said that in using this method of anæsthesia in adults, he preferred a preliminary injection of morphine and atropine. For children and adults up to the age of sixty years he generally carried out induction with ethyl chloride. When the patient was unconscious, he switched over on to a mixture of one part of chloroform to fifteen of ether. He resorted only occasionally to a few drops of chloroform, this always prevented an ether spasm. Dr. Moss described in detail the method which he adopted for inserting the catheter into the glottis. When the glottis was visible in the laryngoscope only as a chink, the introduction of a stiletto almost to the end of the catheter would make introduction easier. A great

deal of his work had been done with a "Lidwill" machine, but he had made a slight modification by the introduction of a Y-shaped inlet in the pump so that, when necessary, oxygen or carbon dioxide could be administered with ease and rapidity. The advantages of this method of anæsthesia were the absolute control of the amount of anæsthetic administered, the rapidity of removal of anæsthetic when an overdose had been given and the certainty of delivery of anæsthetic and air to the patient. The disadvantages were the rather costly apparatus, the occasional difficulty in the introduction of the catheter and the fact that with a careless anæsthetist overdosage was more likely to occur.

DR. A. B. WATKINS (Newcastle) drew attention to the great safety in the prevention of inspiration of blood and mucus from the throat into the trachea. He spoke of the disadvantages of the method, including the expense of the apparatus and the objection raised by some that the catheter might damage the trachea. He admitted that it acted as a foreign body, but thought that any disadvantage in this respect was more than compensated by the absence of other foreign material in the nature of blood and mucus. Lack of skill in introducing the catheter was a cause of this method of anæsthesia not being used more frequently. A method of digital introduction which had failed only once in a series of seven hundred cases, would be of great help. There was also a danger of passing the catheter into the esophagus. This was great if the pressure of the ether-laden air was excessive. Normally in the thoracic œsophagus there was a small quantity of air and the patient by struggling would often expel the air in and out of the catheter. To an inexperienced anæsthetist this would give the impression that the catheter was in the trachea. He remarked that air would often enter the stomach when the catheter was in the trachea. This was caused by the surgeon pressing the tongue against the pharyngeal wall and not allowing an exit airway, causing the air to pass down the esophagus into the stomach. Caisson disease as a result of excessive pressure was also a possible danger. He had not seen laryngitis, but thought it might possibly be due to dipping the catheter into strong antiseptics.

Dr. Watkins advised that after intratracheal anæsthesia the patient should be allowed to return to a greater degree of consciousness than was usual after anæsthesia. The reason for this was that the vocal cords had become accustomed to being stimulated by a foreign body at the time of operation and would allow blood to pass without causing the patient to cough, if he were in a deep or moderate degree of unconsciousness.

Dr. H. J. Daly (Sydney) was of the opinion that there was a risk of introducing septic material when the catheter was introduced digitally.

Dr. M. C. Lidwill (Sydney) pointed out to Dr. Moss that he was not responsible for the introduction of intratracheal ether into Australia, the credit being due to the late Thomas Fiaschi. The risks of this method were nil. He had in his long series failed in only one instance to introduce the catheter. The patient had an extremely long pharynx and a bronchoscope became necessary.

Dr. F. L. Davies (Melbourne) thought that the use of this method should be restricted to patients suffering from lung disease for whom perhaps ethylene administered by the intratracheal method might be advisable or from gottre with tracheal obstruction. In operations of the throat and nose the advent of the Davies's gag had obviated the fear of blood passing into the trachea. As a routine in abdominal operations he did not approve of the method. He maintained that in any type of intratracheal apparatus in which air was blown through ether, instead of over it, there was danger. There should certainly be a blow-off apparatus to obviate any chance of emphysema.

Dr. R. W. Hornabrook (Melbourne) thought that there was a tendency to use the intratracheal method when simpler methods should be used. In this Dr. H. Hunter concurred.

Dr. G. Brown (Adelaide) disapproved of any apparatus like the Connell with a sight feed drop owing to the presence of vapour in the chamber at a time when it was not

required, particularly when it was necessary to give the patient a supply of pure air. Owing to the presence of ether it was impossible to give the necessary pure air for a considerable time. Dealing with the question of heating, Dr. Brown was of the opinion that warming of the vapour had no virtue. It was preferable to pass the catheter by means of a laryngoscope, but sometimes in a respiratory tract greatly distorted by a large gottre the digital method was necessary. For children undergoing dental operations the intratracheal method was preferable.

The Position of a Patient During Anæsthetic Induction.

Dr. R. W. Hornabrook (Melbourne) read a paper on the position of the patient during the induction of anæsthesia. He gave records of some experiments which had been undertaken by competent observers with himself as the subject. He said that the patient should always be placed in the most comfortable position during induc-That position was either the upright or the semiupright position. The adoption of a comfortable position was of the greatest importance in increasing the safety point. The recumbent position increased the risk to the patient. It favoured cerebral congestion and this meant an increased tendency to cerebral excitement with its accompanying dangers. He advocated the use of morphine and atropine prior to induction. Small doses of these drugs lessened the tendency to acidosis and pulmonary complications and assisted in cutting down the actual consumption of anæsthetic to a minimum. When the patient was returned to bed he should lie with his head and shoulders well raised at a natural angle. Unless there was very strong reason to the contrary a patient should be permitted to have a meal as soon after operation as he desired, for vomiting on an empty stomach might bring on acidosis.

Dr. H. J. Daly (Sydney) said that he took it that Dr. Hornabrook's paper was not strictly limited to the position of the patient during induction, but included some remarks on premedication. In his opinion the best position for a patient during induction was that in which the patient felt most comfortable. Most people felt at ease lying down, with the head raised on a pillow, not in either the upright or the semi-upright position as suggested by Dr. Hornabrook. He thought that the blood pressure and pulse rate were raised during induction, but that they returned to normal when the patient was under the anæsthetic. Hornabrook took his records in the upright position, but in all probability the same rise in blood pressure would be recorded in their recumbent position. He noted that Dr. Hornabrook used chloroform induction even in the upright position and although he had used chloroform himself for some years for induction, he had abandoned it in favour of ethyl chloride or ether. He agreed with Dr. Hornabrook that the best possible relaxation was obtained with chloroform, but as it was a direct tissue poison, it was an unnecessary extra risk. As the greater number of fatalities occurred during induction, before the operation had begun, it was wise to leave it out of the anæsthetic bag. For induction he used ethyl chloride; he instructed the patient to hold up the forearm and when it commenced to waver, he changed to ether. A very small stream of carbon dioxide run in under the mask through a small tube hastened induction by stimulating respiration. It was surprising how quickly big robust men would become anæsthetized. He agreed with Dr. Hornabrook in that he thought the anæsthetist should see his patient beforehand with a view to a thorough examination. The excellent results obtained by genito-urinary surgeons were accounted for by the fact that they had their patients thoroughly examined and passed as being in the best condition before operation. He also agreed with Dr. Hornabrook on the necessity of premedication. He gave his adult patients 0.0075 gramme of morphine and 0.0006 gramme of atropine, one-half to three-quarters of an hour before induction. If more than seven and a half milligrammes of morphine were given, he found that the patient's respiration became shallow during anæsthesia and that the patient took a long time to eliminate the

anæsthetic after operation. Dr. Hornabrook gave only 0.0004 gramme of atropine, but Dr. Daly thought with this dose he could not be sure that his patient would be free from mucus during operation. Coughing was an indication that the anæsthetic vapour was too strong. He thought that stifling each cough by flexing the chin on the neck would hasten the induction, as this prevented the patient from emptying the ether vapour out of the lungs. He did not agree with Dr. Hornabrook that the patient was better for a light meal given two hours before operation. A much better plan was to give an orange drink with plenty of sugar or a little glucose stirred in two hours before operation, as this tended to prevent any tendency to acidosis following anæsthesia. In regard to buzzing in the ears and throbbing of the head, which Dr. Hornabrook claimed were absent in the upright or semi-upright position, he did not find patients often complaining of these symptoms when induced in the recumbent position with ethyl chloride. Dr. Hornabrook had apparently proved that induction with chloroform in the upright or semiupright position was not necessarily dangerous, as had been previously considered, but he thought that equally good results were obtainable in the recumbent position with the head on a pillow.

DR. F. McMechan (Ohio) remarked that tradition had taught that various anæsthetics were dangerous in certain positions, whereas records revealed a different story. He quoted Shipway's records of a number of patients anæsthetized with chloroform by the intratracheal method in a sitting position. Surgeons were performing operations on the brain with the patient in a sitting posture. At the same time, it was dangerous to commence a prolonged anæsthesia in one posture and then to change to another The circulation could not be controlled under posture. anæsthesia as in normal consciousness. Dr. McMechan noted the success of operations on the Gasserian ganglion with the patient virtually sitting up in a dental chair and of cerebellar operations with a patient in a straddled position on the chair, the head resting on a head-rest and the patient in the position to which the surgeon was normally accustomed when examining the cerebellar region.

DR. M. C. Lidwill (Sydney) agreed with Dr. Hornabrook that the patient could be anæsthetized in any position, but he did not like the leg hanging down during a long operation

DR. F. L. Davies (Melbourne) thought that the patient should choose his own most comfortable position. If the patient required his head to be raised by means of a second pillow, he allowed him to have it, but he removed the pillow in a short time and thus got the patient lying flat on the table, so as to obtain a straightened trachea and a free airway which was most essential to anæsthesia. In clinical experience the head in the upright position was not the best position.

DR. H. HUNTER (Sydney) said that he thought struggling while the patient was in a recumbent position was not due to this posture, but rather to other reasons such as hurrying the administration or a poor airway. He agreed with the remarks by Dr. Hornabrook about the position of the patient when in bed after the anæsthetic, in having the head raised on a pillow and not lying back on the bed. In regard to Dr. Hornabrook's remarks on shock, Dr. Hunter thought that light anæsthesia produced more shock than deep anæsthesia.

Dr. Gilbert Brown (Adelaide) said that he always had his patient in a comfortable position of going to sleep. When the patient returned to bed after the operation, he was put in a low Fowler position and as a result of this there was considerably less vomiting. The anæsthetics which he had given for brain operations, had always been given in a sitting-up position. On the question of food he taught his students to let the patient have a meal about four hours before operation. The fear of anæsthesia often prevented the stomach from functioning and stasis occurred. On the question of deep and light anæsthesia, he thought it was easy to use blood pressure charts and to note the drop in systolic and diastolic pressures which occurred under deep anæsthesia.

In his reply Dr. Hornabrook said that he realized that chloroform was a potent drug, but he had purposely taken chloroform on account of its potency, for if he could stand chloroform, he could stand the other anæsthetics.

Cardiac Disease and Anæsthesia.

Dr. Mark C. Lidwill (Sydney) read a paper on cardiac DR. MARK U. LIDWIN.

disease and anæsthesia. He said that there were failure of the neuro
reale itself and ante mortem clotting. The fatigue of ordinary muscle was not due to the fibres of the muscle becoming tired, but was due to the exhaustion of the nerve ending. Provided the muscle had plenty of oxygenated blood, it was still capable of contraction by direct electrical stimulation long after its nervous mechanism had failed. Similarly, it might be argued that a heart was capable of contracting some time after its neuro-muscular mechanism had failed, provided some artificial means of stimulating the heart were forth-He had devised a method of doing this. Lidwill discussed various disorders of the heart in turn and referred to the question of anæsthesia in connexion with them. He would not hesitate to administer an anæsthetic to a patient with sino-auricular block. complete heart block and bradycardia were present and the patient had good compensation, an anæsthetic might be administered with comparative safety. If Stokes-Adams's syndrome were present, he would hesitate. Extra systoles usually cleared up during anæsthesia and were no contraindication. He would on no account administer an anæsthetic to a patient with paroxysmal tachycardia, unless it was a question of life and death. Provided that there was good compensation or even moderate compensation, ether might be administered to patients with auricular fibrillation without any trouble or worry whatsoever. In pulsus alternans the danger was directly proportional to the amount of alternation. Congenital heart disease offered practically no contraindication to anæsthesia. Dr. Lidwill then discussed the question of anæsthesia in patients with heart failure. He said that such patients should be put to bed for many days before the operation if possible and be thoroughly treated with digitalis, signs of uræmia were present, this should be treated. was almost incredible how close to death a patient might be with cardiac failure and yet be able to take an anæsthetic. He had been able to give an anæsthetic even to a patient with adherent pericarditis, with enormous hypertrophy of the heart and general dropsy involving the hands. In conclusion Dr. Lidwill demonstrated the machine which he had previously mentioned. It required only to be plugged into a lighting point. One pole was applied to a pad on the skin and was saturated with strong salt solution. The other pole which consisted of a needle insulated except at its point, was plunged directly into the ventricle and the machine was started. Cardiac revival by this means could be applied to persons suffering from cardiac failure during anæsthesia, it could be used in cases of drowning if combined with intratracheal insufflation, in certain types of gas poisoning, in sudden death during the incidence of acute disease and possibly in sudden death during cardiac disease.

DR. M. D. SILBERBERG (Melbourne) said that Dr. Lidwill had got down to first principles. He said that cardiographs which could be taken by means of a portable machine, might be of use in anæsthesia. In making a generalization on the use of anæsthetics in any form of heart disease, the main thing to be taken into account was the symptoms, for example, the degree of distress rather than the signs. Many deaths occurred through ventricular fibrillation, a functional change, death being rapid. Dr. Silberberg thought that the machine which Dr. Lidwill had invented for the restoration of the apparently dead, would be of great use to an anæsthetist. In cases of collapse from ventricular fibrillation, one cubic centimetre of adrenalin injected into the heart muscle, if thought necessary, could be used, also massage or Dr. Lidwill's machine. In operations to benefit heart disease, such as in toxic thyreoid conditions or in rheumatic myocarditis where the infection was believed to be through the tonsil and where the focal infection should be removed, it resolved itself into a question of the time for operation. It was advisable to wait until the hyperacute stage was over and the patient was improving. They should not delay too long. Effort syndrome, a functional condition, formed 10% of cardiological affections and was often based on a toxic origin. The ordeal of operation at times stirred these patients up and aggravated their condition and as a result improvement would not be shown for about three months. He thought that auricular fibrillation was not a contraindication to anæsthesia, provided that control of the heart's action was obtained by digitalis and rest.

Dr. F. L. Davies (Melbourne) thought that there were very few heart affections which influenced the risk of anæsthesia to a great extent. Formerly stimulation by battery had been applied to patients who had collapsed under anæsthesia, probably with bad results. He thought that the best stimulus was artificial respiration. The method of induction and maintenance of anæsthesia should be the same in both the healthy patients and the patient suffering from severe heart disease, this should be impressed upon every anæsthetist. Death occurred more

Dr. C. Coghlan (Sydney) supported Dr. Lidwill in his remarks on his machine. He related the circumstances of a child, apparently dead, who had been brought back to life. Too much should not be expected of this machine in attempts to revive infants who had died from hæmor-

often in simpler cases than in difficult ones.

rhage of the tentorium.

Dr. B. R. Hallows (Melbourne) remarked that he had had excellent results with ethylene and oxygen in women whose labour had to be terminated on account of mitral stenosis.

Dr. F. H. McMechan (Ohio) said that in studying the relationship of anæsthesia to heart disease statistically the International Research Society had found three groups of known cardiac lesions. Unselected records revealed a mortality rate of a fraction below 1% in known treated cardiac lesions. There were two tragic mortality rates; the one was connected with frank decompensation and the rate was about 12%. There was a concealed mortality rate in which the patients were usually classed as A1 risks and the rate was about the same, as in the decompensation type. One point in diagnosis disclosed these and could be summed up in the three words: "faint heart sound." In local anæsthesia it had been shown rather conclusively that when the patient died, the anæsthetic had affected the bundle of His. This might be combated by the use of a small quantity of ether as a cardiac stimulant and of pituitrin. Local anæsthesia could produce a tragic condition of the heart. The amount of local anæsthetic should be gauged by the pulse pressure. If this was about half normal, the amount of local anæsthetic should be reduced to half. He referred to a number of deaths of children underoging tonsillectomy as a result of thymic disease.

DR. GILBERT BROWN (Adelaide) told his students that there were two things to be remembered, that patients suffering from cardiac disease seldom gave trouble and that all patients should be treated as potential cardiacs. Ethylene would probably solve the problem of cardiac disease.

Dr. Lidwill in reply said that he realized that ventricular fibrillation was a cause of many deaths. In answer to Dr. Davies he said that his machine was not primarily intended for patients who had collapsed under anæsthetic, but he thought that it would be useful in such circumstances. He said he would be pleased to try ethylene in patients with heart disease. In regard to Dr. McMechan's remark about faint heart sounds he thought too much importance should not be attached to this. Heart sounds were faint in a normally healthy fat man. In some patients, supposedly A 1 risks, who had collapsed and died, he was of the opinion that had careful examination been made, it would probably have been found that they had had pulsus alternans. In regard to local anæsthesia, Dr. Lidwill had seen cases of cocaine poisoning and quite agreed that ether analgesia was the right thing. tion should be paid to symptoms in determining the risk

associated with anæsthesia in patients with cardiac affections.

Local Anæsthesia.

Dr. C. E. Corlette (Sydney) read a short paper in which he made a plea for the use of local anæsthesia. He spoke of the advantages likely to result from a healthy scepticism; local anæsthesia was in his opinion one of the things that the wise man would investigate. If surgeons thought that they could do without local anæsthesia in major surgery, they could do it only by giving second rate service. It was possible neither to become nor to remain a first-rate surgeon if second-rate service was what the patient received. Local anæsthesia gave the nearest approach to a shockless operation that was attainable. There were two ways of using them, morphine and hyoscine. Many used them as a routine in small doses. Labat was one of these. Dr. Corlette had tried all methods, including that with no premedication and he felt satisfied that the fuller dosage was best, even though occasionally a patient became so restless that it was necessary to give He pointed out that anæsthetists should be preether pared to take on the induction of local anæsthesia or of general anæsthesia with equal facility and without bias. The surgeon should be spared the thirty-five or forty minutes' labour of injecting fluid prior to such an operation as amputation of a breast. In these circumstances the anæsthetist, if he were giving local anæsthesia, could assist at the operation, but if for any reason it became necessary to administer a general anæsthetic, he should be ready to do this.

Dr. V. Coppleson (Sydney) said that local anæsthesia did not gain the popularity that it deserved, partly through ignorance of detail and partly because of the fact that the anæsthetic had been injected at random. It was probably the most highly technical of all forms of anæsthesia. It required an accurate knowledge of anatomy. He favoured general anæsthesia for abdominal surgery and advised local anæsthesia for head surgery. Empyema, he thought, should be carried out under local anæsthesia and suggested it also for emphysematous patients with herniæ.

Dr. F. H. McMechan (Ohio) was of the opinion that at every surgical hospital some members of the staff should make a special study of local regional anæsthesia and be prepared to apply it when it was indicated. He recommended the use of those local anæsthetics which gave prolonged periods of anæsthesia. He spoke of the quinine urea salts being added to local anæsthetics for prolonged anæsthesia. In obstetric practice the quinine urea salts had been added to local anæsthetics in caudal anæsthesia and the result was a painless post partum period.

Dr. Gilbert Brown (Adelaide) thought that it should be the function of an anæsthetist to employ local anæsthesia, although the surgeon had undertaken this. This, however, would take up a great deal of the anæsthetist's time and he would be unable to do anything else. He would therefore require adequate remuneration. He had used sacral and caudal anæsthesia combined with nijections into the abdominal wall. In regard to premedication with hyoscine, he noted that Dr. Corlette had said that excitement occurred mostly in patients over the age of forty. He was of the opinion that the best way would be to give 0.0006 gramme a day or two before and thus to test the patient's response to the drug.

Rectal Narcotics.

Dr. Kempson Maddox (Sydney) read a paper on recent developments in the use of rectal narcotics. He referred to the early use of ether vapour introduced into the rectum and then to Gwathmey's oil-ether colonic method reported in 1913. He said that Gwathmey's claims in regard to the advantages of rectal administration over inhalation methods could be applied to rectal anæsthesia in general, including "Avertin." According to these claims the operative field was free from contamination and obstruction by the anæsthetist, particularly if an artificial airway was used. The anæsthesia was of a uniform depth and complete relaxation was obtained. There was a lessening of pharyngeal and bronchial secretion and fewer post-

anæsthetic respiratory complications occurred. Pulmonary diseases were less liable to be affected adversely. It was possible to administer oxygen without interruption of the anæsthesia. There was less loss of body heat from sweating and warming of vapour in the lungs. There was a reduction of post-operative vomiting and nausea; this occurred particularly with "Avertin." There was less hæmorrhage in head operations. There was less tax on the heart and lungs. The central nervous system was not so deeply narcotized as with inhalation methods. The psychic element of fear was largely eliminated. Dr. Maddox then referred to the Gwathmey synergistic method of obstetrical analgesia. He described in detail the manner in which the morphine and magnesium sulphate were injected intramuscularly and in which the oil-ether mixture was introduced into the rectum. He said that the method was worthy of close attention in Australia, because an increasing number of women was demanding some form of analgesic child-birth. He then mentioned the use of rectal injections of paraldehyde in children before and after operation. He gave details of the dosage and said that the clinical results were excellent, the child being shielded from the psychic trauma unavoidable with the usual straight methods of anæsthesia. Finally Dr. Maddox discussed "Avertin." This drug, tri-brome-ethyl alcohol, had been produced by Willstätter and Duisberg from the yeast fermentation of bromal. He felt sure that the same interest in this drug would be shown in Australia as had been shown in the old world. The drug was taken up from the bowel completely and with great rapidity and reached a blood concentration of six to nine milligrammes per hundred cubic centimetres during narcosis. It was eliminated by the kidneys and in traces by the sweat after combination with glycuronic acid in The three main contraindications to its use were rectal, hepatic and renal disease. There was a wide therapeutic margin between the minimum narcotic dose and the lethal dose. Dr. Maddox gave details of some experimental work which was being carried out with this drug in the Department of Urology of the University of Sydney.

Dr. M. C. Lidwill (Sydney) said that he had used the oil-ether mixture for injection into the colon on many occasions, but had given up this method. The main objection was that the anæsthesia had to be begun on one day and completed two days later. It was quite easy to control this method of anæsthesia by means of a catheter and it was also quite satisfactory. He had not used "Avertin" frequently and was not greatly impressed with it, mainly on account of the small margin of safety. He thought, however, that it would have its use if it were given in small doses followed by a general anæsthetic. "Avertin" was a respiratory depressant, having no effect on the myocardium.

DR. C. C. COGHLAN (Sydney) said that he was convinced that "Avertin" would be of great use in obstetrics. Hitherto he had been an ardent advocate of morphine-scopolamine narcosis, but was prepared to abandon it, in favour of "Avertin." He had been using the latter at the Women's Hospital and from an obstetrical point of view the results had been extremely good. He gave 0-1 gramme per kilogram body weight for the initial dose and repeated with a dose of 0-05 gramme per kilogram body weight when the patient was recovering consciousness. During the greater portion of the time the patient was amnesic. He had noted that it had no effect on the infant.

Dr. L. S. LOEWENTHAL (Sydney) remarked that he had used it only on two occasions, but had not been greatly impressed with it.

Dr. F. L. Davies (Melbourne) was of the opinion that "Avertin" was more applicable to obstetric work.

DR. GILBERT BROWN (Adelaide) said that he had not used "Avertin" and had given up colonic oil-ether anæsthesia. He had found it too prolonged. In one patient pneumonia followed this method; he thought it was probably in the nature of an aspiration pneumonia.

In his reply, Dr. Maddox admitted that colonic oil-ether anæsthesia took a long time. In reference to remarks of

Dr. Lidwill on the margin of safety of "Avertin," German authorities had asserted that it had a wider margin than ether administered by injection into the colon. He agreed with Dr. Coghlan and to Dr. Loewenthal he suggested that he would appreciate it much better after further experience.

DR. GILBERT BROWN remarked that he would not like to take the amount of paraldehyde as premedication as suggested by Dr. Maddox.

In answer to Dr. Gilbert Brown, Dr. Maddox said that his remarks on the dosage of paraldehyde concerned only children, not adults.

Spinal Anæsthesia.

Dr. Robert Fowler (Melbourne) read a paper on spinal anæsthesia. He based his remarks on three hundred cases in which he had used the method. He described in detail the technique of the administration and said that in most instances he had used an 8% solution of "Novocain." At first he had used 4% "Néocaine," but since it was twice as potent as "Novocain" it was therefore easier to give an overdose. He had had one fatality and this had been largely due to an overdose of "Néocaine." "Novocain" appeared to act best in strong solution and its action on sensory nerves was much more powerful than on motor nerves. He did not include adrenalin or ephedrine in the thecal injection. There was evidence to show that the ischæmia resulting from the use of these drugs was responsible for evil after effects. In his opinion the method was contraindicated and should not be used for really terror-stricken subjects. It should not be used in the presence of pelvic infection, for if any acute inflammatory mischief were present there was risk of the spinal puncture determining a metastatic meningitis. As a restorative all drugs were insignificant compared with ephedrine.

Dr. R. J. Silverton (Sydney) said that there were two important principles to be observed in the use of spinal anæsthesia. The first was that a solution which was distinctly heavier than the cerebro-spinal fluid was used and the second that correct posturing of the patient immediately after the injection was essential, with maintenance of that strict posture for at least five minutes after the injection. He considered the use of the heavy solution was the best in that the object was simply to secure gravitation of the anæsthetic drug in any required direction. The other method in which a fluid lighter than the cerebrospinal fluid was allowed to float up to the required region, was inferior. Barker's solution containing 5% "Stovaine" and 5% glucose was admirable. Dealing with the second principle of administration, Dr. Silverton described his method. He made the injection with the patient sitting as he found it more easy and quickly performed in this position and then as rapidly as possible he placed the patient in the desired posture. There were three different positions according to the level of the operation. In the first for upper abdominal and renal operations placed one low pillow under the head and a sand bag under the buttocks. For the patient lying supine he arranged that the lowest point in the vertebral canal was the upper thoracic region. For the second for lower abdominal operations he placed two low pillows under the head and a sand bag under the buttocks, so that the lowest point was the mid-thoracic region. For the third for operations on the perineum, anal canal, external genitals, vagina, cervix and for endourethral and endovesical operations, only the sacral nerves needed to be anæsthetized; the patient was kept sitting up after the injection, in order that the solution sank and bathed the long strands of the cauda equina. Under each of the three methods the fixation time allowed was five minutes, after which period the patient was laid quite flat and placed in a position for the operation. The skin over the proposed operation area should be tested as soon as the five minutes' fixation period was over; if the analgesia had not already risen to about the middle of this area the patient should be placed in the Trendelenburg position until the analgesic level rose satisfactorily. On the other hand, if the analgesia was found to have risen above the middle of the operation area at the end of five minutes, he thought it was wise

to keep the head slightly raised for a few minutes. dangers from too high a diffusion of the drug he said were circulatory collapse from a great fall in blood pressure following upon splanchnic nerve paralysis and rarely respiratory failure from paralysis of the intercostal nerves. He considered that the best dose to use for both lower and upper analgesic operations was five centigrammes of "Stovaine," that was, one cubic centimetre of a 5% solution. For the sacral nerve operations only 2.5 centigrammes were needed and in this way splanchnic paralysis was completely absent and the blood pressure did not He considered the low spinal method as an easy, safe and efficient method of anæsthetizing all the sacral nerves and should completely replace sacral and parasacral methods for obtaining the same object. Only a small quantity of the drug was necessary and only one puncture. The result was assured in every patient and no general effect was ever observed. Dealing with headaches Dr. Silverton remarked that he had not observed this following upon spinal analgesia during the past seven years. He considered that the absence of headache was due to the fact that he insisted on the patient lying almost flat and comparatively still for three to four days after the operation. During transportation from the operating theatre to the bed the patient was carried very carefully and care was taken not to shake him or allow the head to be raised. In the nursing turning from side to side had to be done very carefully. Dr. Silverton admitted that it was a form of anæsthesia in which attention had to be paid to every detail, but he thought that anybody able to do a lumbar puncture who was careful enough to follow out the details, should have no trouble. He drew attention to the value of ephedrine in the control of the blood pressure and thought that it would render possible a much more extended use of spinal anæsthesia in upper abdominal and renal operations. On this point he thought it was all important to anticipate failure by carefully noting the rising level of the analgesia and giving the injections of ephedrine early. The usual dose was 0.05 gramme. In hypersensitive persons it was given before the spinal injection. Once the pressure was allowed to fall, it was difficult even with repeated doses of ephedrine to induce it to rise again. In conclusion, Dr. Silverton said that he still had the utmost faith in this method, but insisted that every point in the technique must be used.

DR. B. T. ZWAR (Melbourne) congratulated Dr. Fowler on the excellent manner in which he had presented the subject. He had come there to speak of his experience with spinal analgesia and to sound a note of warning. It was during 1905 that he had first seen the use of spinal analgesia. It was in von Eiselberg's clinic in Vienna. So impressed had he been with its advantages that he commenced to use it on his return to Melbourne in 1906. Within three or four years he had used it over five hundred The method and precautions which he had followed, did not differ from those detailed by Dr. Fowler. "Stovaine," tropacocaine and "Novocain" had been used and various forms of solution including those of Barker and Jonnesco had been employed. Though he had had few failures as regards obtaining an efficient analgesia, he regretted that he had been much less fortunate with the occurrence of after effects than advocates of spinal analgesia were generally prepared to admit. These after effects consisted of shock accompanied by a considerable fall of blood pressure, severe backache, severe and persistent headache, paresis and paralysis of muscles and one attack of paraplegia. The paraplegia had followed the spinal injection in a patient undergoing an operation for anal fistula, though because it was post hoc it was not necessarily propter hoc. In view of the backache and headache which had preceded the onset of paraplegia, he could not dissociate it from the same. It should be stated that the paraplegia had occurred before the Wassermann test had come into use and that this test had subsequently revealed that the patient had suffered from syphilis. Antisyphilitic treatment instituted before the application of the test and subsequently had not ameliorated the unfortunate sufferer's tragic condition. He had become convinced that it was not possible to limit the effect of intrathecal spinal injections of analgesics. He had not made use of spinal analgesia for over sixteen years. He considered that with the range of safer and harmless methods of anæsthesia the use of spinal analgesia was not justified. He would not have a spinal analgesic administered to himself under any circumstances.

Dr. F. H. McMechan (Ohio) said that it had been the conviction of those who had attended the conference held in Boston in 1928 that all the surgeons who had witnessed the demonstration, would need to have recourse to every possible method of resuscitation. He did not doubt Dr. Silverton and Dr. Fowler on their excellent results. Those who had been successful, had certainly been so only as a result of their great care, but in his opinion it still remained an extremely dangerous form of ansesthesia except in hands of absolute experts. Regarding the question of a heavy or a light solution, that seemed to be of little difference, providing the man using it, used it with the greatest of care. Local ansesthesia abolished the oxidative and carbon dioxide function of nerve tissue; consequently it affected the physiology of the patient as much as a general ansesthesia as it restored the oxidative function.

Dr. M. Sutherland (Melbourne) said that eighteen months previously he had had the opportunity of seeing a good deal of spinal anæsthesia in Vienna. He could not say that it was satisfactory as almost invariably there was an anæsthetist standing by. The Australian woman, he thought, would not stand what the Viennese did. He had noted the after effects in the form of paresis, rectal and bladder trouble. He admitted that he had had no personal experience, but he had been informed of some of the bad effects by competent Viennese medical men. Undoubtedly he thought this method needed a specialist.

Dr. R. W. Hornabrok (Melbourne) said that he had had the opportunity of being with Barker some years previously and had seen two deaths in two weeks. Certainly the technique had been improved since that time.

Dr. Gilbert Brown (Adelaide) thought that the discussion had been extremely interesting. He showed lantern slides of blood pressure charts indicating blood pressure in spinal anæsthesia. In his opinion there was a contraindication which he would like to mention, namely, the patient with a low pulse pressure. He also quoted some of the bad after effects which he had seen following spinal anæsthesia.

Dr. Fowler in reply said that he had learnt a good deal and would go back with a view of improving his methods. Dr. Zwar's remarks were arresting. The fact that the blood of Dr. Zwar's patient yielded a Wassermann reaction was a contraindication. It was necessary to examine the patient thoroughly as suggested by various speakers. He would not like to see it sent to the scrap heap. In conclusion he agreed with Dr. Silverton on the use of ephedrine.

Ethylene and Nitrous Oxide and Oxygen Anæsthesia.

Dr. G. LEONARD LILLIES (Melbourne) read a paper in which he recorded his experiences gained from the administration of ethylene and oxygen or nitrous oxide and oxygen anæsthesia in five hundred instances. hundred thyreoidectomy operations had been carried out under nitrous oxide and oxygen anæsthesia, 120 operations on the upper part of the abdomen under ethylene and oxygen and 280 operations of other kinds under ethylene Dr. Lillies said that ethylene should be and oxygen. employed when operation on a patient was regarded as particularly risky. In coming to a conclusion the formula adopted by Moot was useful: Pulse pressure ÷ diastolic pressure × 100. The normal ratio lay between 40 and 60. When the ratio was outside these limits, ethylene should be employed. Owing to its inflammability it should not be employed when the actual cautery had to be used. had administered ethylene and oxygen in 51 chole-cystectomy operations, in 26 cholecystectomy operations with stones in the common bile duct, in 19 gastrectomy operations, in 10 gastro-enterostomy operations and in 11 exploratory operations of the upper part of the abdomen.

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The great advantage of the use of ethylene in upper abdominal conditions was the patient's feeling of well-being. One disadvantage was that it was impossible to obtain the same relaxation as with ether anæsthesia. regard to nitrous oxide and oxygen anæsthesia, he had used it in one hundred operations on the thyreoid in preference to ethylene because the patients liked it better than ethylene and because consciousness was regained more rapidly than with ethylene. In this way when both lobes of the thyreoid were being removed at one operation, the mask could be removed after the removal of one lobe in order to allow the patient to speak and cough. In this way the surgeon was assured that he had not injured the recurrent nerve upon one side before he attacked the other lobe. Under nitrous oxide anæsthesia there had been one death, that of a female patient, aged forty-eight years, who had died shortly after removal of one lobe of the thyreoid.

Dr. W. Vickers (Sydney) said that one consideration in the use of anæsthetic gases was their expense. of ethylene had been well established for patients with toxic goître and he thought that there was no better He pointed out that the nurses and house surgeons had remarked on the well-being of the patients after operation, as compared with ether. Ethylene had often been judged by the method of induction adopted by inexperienced anæsthetists. It was essential that the surgeon should wait until full anæsthesia had been established. There were two great factors in its use which prevented shock, the total absence of fluid loss, there was no sweating, and the absence of post-anæsthetic vomiting. In upper abdominal surgery there was not the same relaxation as with ether, even if ether were added to the ethylene. He thought it was an excellent anæsthetic in pulmonary tuberculosis and in diabetes. If the surgeon was gentle in his manipulations, the relaxation obtained with ethylene would be quite sufficient.

Dr. B. R. Hallows (Melbourne) remarked that he had been pleased to see the lantern slides illustrating the Austox machine. Relaxation was not so good as with ether, but it could be much improved by giving more oxygen. He had used ethylene anæsthesia for the termination of labour in toxic conditions with excellent results.

DR. M. K. Moss (Perth) said that there was one use which had not been mentioned, namely for dental extractions. There was little hæmorrhage and by packing the throat there was no swallowing of blood and there was no swallowing of blood and there

was no post-anæsthetic vomiting.

Dr. F. L. Davies (Melbourne) had employed ether by the open method for so long a time that it required something strong to convert him. He would like to refer to the inflammability of ethylene; it was necessary to beware of radiators. Disher had said that the patient's colour remained good. Dr. Davies thought it was too good, as a result of the presence of carbon monoxide. Bleeding took place owing to alteration in the coagulability of the blood. Convalescence was certainly much better. On the question of the type of machine for this anæsthesia. there question of the type of machine for this anæstnesia, there was a tendency to bring in a cheaper article. In the machine mentioned by Dr. Hallows the supply of gas could not be seen. He was of the opinion that it should always be visible. A beginner should use a machine that was as fool-proof as possible. He agreed that for patients with diabetes ethylene was probably preferable, but since diabetes could be fairly well controlled, ether was comparatively safe. As regards anæsthesia for patients with goftre he claimed that he had probably induced anæsthesia as often for this condition as anyone in Australia, a series of over three hundred patients every one had survived the ether anæsthesia. One patient had undergone the two-stage operation for gottre and had died one day after the second operation. It seemed to him that death after the second operation. It seemed to him that death might have been due to ethylene. He thought that gas anæsthesia would not supplant ether.

Dr. Ellis Murphy (Brisbane) said that he thought there were distinct advantages in gas anæsthesia. His own experience was mainly with nitrous oxide and oxygen. He thought that relaxation in many patients was excellent, but in the majority it was not. He thought that the oxygen supply was always under control and it was an advantage to be able to give oxygen immediately.

Dr. F. H. McMechan (Ohio) considered one or two points which had been raised. Everybody imagined that this form of anæsthesia was costly, but that was not an economic way to look at it. In a goître department of a hospital in the United States of America in a series of 1,850 patients ether had been put into the apparatus on only two occasions. The great point of economy was that the patient could go home on the sixth day. Those suffering from a substernal goître could go home on the eighth or ninth day. The number of patients who were able to pass through the hospitals would be considerable and this would make the work much lighter. At least 25% more patients could be handled by the hospitals. Hence it was one of the greatest economies that could be brought into In a recent survey in America there had been collected figures on 600,000 inductions of anæsthesia. In that series there had been only fourteen accidents and three deaths, two of patients and one in a laboratory as the result of an explosion. In America there were over one hundred fires from ether per annum. The risk in Australia was much less.

Dr. Gilbert Brown said that his own view was that those who used ether for patients with very toxic goîtres were not doing their job. In his last three hundred blood pressure charts he noticed that there were thirty-four of patients with exophthalmic goître. Of these nineteen had been anæsthetized by nitrous oxide and oxygen, twelve by ether and oxygen and three by ether by the endo-tracheal method. The ether had been given twice; for one patient with a not very toxic form, it had been used to save expense; in the second instance the gas apparatus was out of order. In his premedication he gave 0.0075 gramme of morphine three hours before the operation, repeated an hour before operation. He had not made up his mind as to which was the better anæsthetic for patients with toxic goîtres, ethylene or nitrous oxide. The unpleasantness of smell of ethylene could be easily overcome by inducing with nitrous oxide and oxygen. One advantage was that it was possible to push the fluid intake very rapidly after the anæsthesia. He could endorse Dr. Moss's remarks on dental anæsthesia. He demonstrated lantern slides to show the readings of blood pressure changes in patients with toxic goîtres under ether, nitrous oxide and oxygen and ethylene and oxygen anæsthesia.

Dr. Disher replied for Dr. Lillies. His own experience was less than that of Dr. Lillies. At times he had been successful and at times he had not. He had had no difficulty in anæsthetizing a patient with ethylene, but he had had difficulty with nitrous oxide. There was a little extra hæmorrhage with ethylene, but not much. He gave 0.6 gramme of chloretone one hour beforehand as a rule, sometimes morphine and atropine and sometimes "Omnopon." He had taken notice of the cost; on one occasion he had found it to be about seven shillings per hour. He would like to ask Dr. McMechan how long it was safe to allow rebreathing. In regard to rigidity in upper abdominal surgery a great deal depended on the surgeon.

In answer to Dr. Disher's question, Dr. McMechan stated that in ordinary standard technique the amount of rebreathing had to be regulated to the individual needs of the patient. With carbon dioxide absorption technique it was possible to continue rebreathing for a considerable period. The carbon dioxide absorption technique was extremely economical. Dr. McMechan also spoke of carbon dioxide as being a general anæsthetic, but in sick human beings it made too much demand on the respiratory and circulatory centres.

Intratracheal Administration of Ethylene.

DR. L. S. LOEWENTHAL (Sydney) read a paper on the intratracheal administration of ethylene. He said that he had used the method on about two hundred occasions. In one instance he had failed to introduce the catheter and in two it had been impossible to continue to give the anæsthetic successfully through the catheter. He had used it in twenty-one thyreoidectomy operations for exophthalmic goître and regarded the method as far superior to any other which he had used. Two thoracotomy operations had been performed, one for transpleural implantation of radium into the esophagus and the other for drainage of

a pulmonary hydatid cyst. The abdominal operations had included a gastrectomy, a cholecystectomy in a patient with diabetes and an exploration of the kidney in a patient with active pulmonary tuberculosis. Among the advantages claimed by Dr. Loewenthal for the method was the fact that the depth of anæsthesia was uniform throughout and easily controlled. There was an absence of any post-

operative chest complications.

In the absence of Dr. Lillies, Dr. F. H. McMehan (Ohio) was asked to open the discussion. He said that in 1926 when in England, he had found that McGill was using a large tube for the intratracheal method of administration. He had employed also a nasal method of anæsthesia for introducing the catheter. To begin with, a gag had been inserted into the mouth and the gas administered by means of a nasal apparatus as in dental anæsthesia. Just prior to opening the gag, a small quantity of ether had been used and as soon as the gag was opened, the anæsthetist had passed three or four breaths in to introduce the tube. The tube had been large enough almost to occlude the trachea. A stiff throat had seemed to be an advantage rather than a relaxed throat. When the first attempt had been unsuccessful, then the anæsthetic had been resumed and the same procedure had been gone through. The second attempt had seldom failed. Once the tube had been in place, it was surprising how the patient conducted the anæsthetic almost automatically. had been no need to use gases under force; pressure had been required only when the chest was open and the opening exceeded ten square centimetres in extent. The method had given an easy respiratory function and a Recovery had been almost immediate. was quite possible with the method of the carbon dioxide absorption technique to bring about economy. anæsthetists had not continued local cocainization of the McGill had done it for a while, but had abandoned it. There was a danger of the patient swallowing the mixture.

Dr. R. W. Hornabrook (Melbourne) said that he was pleased to hear Dr. McMehan's remarks on the question of breathing in intratracheal ethylene, especially on one point, that of the patient breathing himself. As an old teacher he uttered a word about being too enthusiastic on machine-made anæsthesia. It was essential to teach the students the rag and bottle method, as the medical practitioner in the country did not have these machines to

aid him.

Dr. H. C. DISHER (Melbourne) congratulated Dr. Loewenthal on his paper. So far he had not given ethylene by the intratracheal method many times. When he had administered it in this way, the anæsthesia had been the best. At first he had plugged the mouth with gauze. More recently he had a rubber umbrella cap which fitted into the mouth. Before introducing the catheter he used a slight quantity of ether. Only one of his patients had vomited after ethylene; this was a patient with pyloric stenosis whose stomach had not been washed out.

DR. GILBERT BROWN (Adelaide) had tried the intratracheal method with nitrous oxide and oxygen with varying results. He had tried it with ethylene and had used a number 19 catheter. On the last three patients he had used a catheter which almost occluded the trachea. He had found it difficult to introduce one of these with a Jackson laryngoscope and he thought that McGill's would be much better. At the Dental Hospital in Adelaide they were accustomed to induce with a percentage of carbon dioxide and the induction was much better. He found ethylene applied by the intratracheal method very useful in returned soldier patients. There was no necessity to use ether with the ethylene. He agreed with Dr. Hornabrook on the question of teaching students the simplest methods of anæsthetics.

In reply Dr. Loewenthal said that he had never found it necessary to use a gag, as he had been able to get sufficient relaxation of the jaw. To Dr. Hornabrook he pointed out that there was no need for forced breathing; the patient breathed of his own accord. In regard to overenthusiasm he thought that ethylene anæsthesia was for the use of expert anæsthetists. He had not plugged the mouth with gauze. In his opinion it was better to occlude the larvnx.

Deaths During Anaesthesia.

Dr. Geoffrey Kaye (Melbourne) read a paper in which he set forth an analysis of the facts attending the death during anæsthesia of 107 persons which were the subject of a coroner's inquiry in Melbourne between 1919 and 1929. He found that the death rate from anæsthetics in certain public general hospitals was about 1.3%. He had no information of deaths under anæsthesia without an There were ninety-nine deaths under general anæsthesia and eight under local anæsthesia. Chloroform was responsible for eighteen deaths, ethyl-chloride and "Somnoform" were responsible for nine deaths, ether 'sequence" was responsible for forty-three deaths, while "sequence" ether administered by the open method caused twenty-two There were five deaths from nitrous oxide and Five of the eight deaths from local anæsthesia oxygen. were caused by cocaine, one by "Novocain," "Stovaine" and one by β eucaine and adrenalin. Dr. Kaye concluded that every general anæsthesia involved a small but definite risk and should therefore not be lightly undertaken. He maintained that the selection of the safest agent was important. The induction should never be hurried. An effort should be made to assess the tolerance of the patient to the anæsthetic. He referred to the responsibilities of the anæsthetist and particularly to the necessity of controlling mechanical apparatus and of watching the patients in all stages. He pleaded for further investigations into the routine administration of anæsthetics and also for the keeping of accurate records by anæsthetists both in private and in hospital practice.

Dr. Gilbert Brown (Adelaide) congratulated Dr. Kaye on the admirable way in which he had put his case in what

was a dry subject.

Dr. M. C. Lidwill (Sydney) said that statistics were not as a rule interesting, but Dr. Kaye had put his case extremely well. He remarked that he thought the death rate was less in Sydney than in Melbourne. Dr. Lidwill pointed to the deaths following the ethyl chloride-ether sequence. Embley had pointed out that ethyl chloride induction might cause anæsthetic collapse and that this might appear during the ether anæsthesia, perhaps twenty minutes or so afterwards. He also remarked on the fact that ether was often blamed for a bad anæsthesia. This generally occurred in winter time. The cause, he thought, was that the ether did not evaporate well and as a result was poured on and on until the patient received an overdose.

Dr. R. W. Hornabrook (Melbourne) thought that every death under anæsthetic should be recorded. In his opinion the coroner's inquest was useless. He thought that an inquiry by a committee consisting of a physiologist, anæsthetist and pathologist would be of much more use.

Dr. H. Hunter (Sydney) said that he was very pleased that Dr. Lidwill had raised the question of the ethyl chloride-ether sequence. He said that there were two methods of giving the ethyl chloride for the induction. The first was to give a quantity just sufficient to dull the patient's senses. This was more pleasant for the patient, but the induction of full surgical anæsthesia was not attained rapidly. The second method was to push the anæsthesia rapidly until the patient was in a state of unconsciousness bordering on coma. This was most dangerous. There was a great liability for the patient to collapse while under the influence of ether and this tould occur even as late as fifteen minutes after the change to ethyl chloride. There was a form of sudden unexpected collapse of the patient which was quite dangerous. He said that on three occasions this had happened in his own practice.

DR. F. H. McMechan (Ohio) said that the profession in Australia need not worry about its standard when it had men like Dr. Kaye. He could not help but congratulate Dr. Kaye on his paper. He hoped that in the matter of fatalities anæsthetists would not stop in their work until the death rate had been greatly diminished. It was necessary to challenge the death of every patient not leaving hospital. By death he said that he meant not only those occurring during or just after anæsthesia, but as an end result of anæsthesia.

DR. GILBERT BROWN (Adelaide) remarked that records should be kept of every anæsthetic given. He did not

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approve of the man who gave just a "whiff." Every anæsthetic should be given with the greatest care. Chloroform he noted had accounted for many deaths. He advised his students not to induce with chloroform, but to induce with ether and to change over on to the chloroform, if required.

Dr. Kaye in his reply said that he had experienced the trouble with ether during winter of which Dr. Lidwill had spoken. In regard to Dr. Hornabrook's remarks he said that he would like to see a committee of medical men to inquire into deaths under anæsthesia. In conclusion he said that Dr. McMechan had painted a picture in which the work of the anæsthetist was a delight.

Deaths Under Anæsthesia.

Dr. J. W. Rollison (Adelaide) read a paper in which he described six deaths which had occurred at the Adelaide Hospital under anæsthesia during 1928. During this period 8,043 anæsthetics had been administered, 6,062 having been general anæsthetics and 1,981 local. In every instance it had been recognized that anæsthesia was risky and they had been administered only in order to enable an operation to be performed as a last chance of prolonging life. Without exception the patients had been over forty years None had died of asphyxia and it had been apparent that death was not associated with the mode of administration. The cause of death had apparently been heart failure due to the action of the anæsthetic on a heart affected by severe illness or by the loss of considerable quantities of blood. In two instances nitrous oxide and oxygen had been given, in one instance ethyl chloride followed by the administration of ether by the open method and oxygen, in two instances ether by the open method and oxygen and in one instance ether by the open method.

NAVAL, MILITARY AND AIR MEDICINE AND SURGERY.

President's Address.

DR. R. M. Downes (Melbourne) in his address as President of the Section of Naval, Military and Air Medicine and Surgery, referred to changes which had been made since the Great War in the Naval, Military and Air Force Medical Services. The improvements in the Naval Medical Service had been almost entirely in the direction of improving the knowledge of its officers and the standard of treatment by such means as the institution of study leave, examination in professional subjects before promotion and the organization of special departments in naval hospitals. He thought that there was still a failure to envisage the medical service as a professionally controlled body having problems of technique and personality distinct from those of the combatant army service. In the Army Medical Service there had been a move to keep in step with advances in medical knowledge. This was shown by the creation of staff appointments in connexion with pathology and hygiene and by the formation of civilian advisory committees. The greatest development in the Air Force Medical services had been in the knowledge of and methods for ascertaining the physical requirements of a flying pilot. The possibilities of the air for evacuation of casualties in all services were immense. Air transport could be used with equal advantage for the movement of special medical personnel. For the land forces they read everywhere of the development of rapidly moving armoured fighting units and the adaptation of the existing medical services to their needs was one of the problems which would require thought. In this connexion Dr. Downes gave some personal observations and conclusions founded on practical experiences in Palestine during the Great War. The two main factors in the successful functioning of the medical service in this area had been mobility and reserves of transport and equipment to meet the conditions imposed by distance or inaccessibility to more highly equipped medical establishments. Such necessities would have to be borne in mind for future campaigns of comparable nature.

First Aid and Transport of the Sick and Injured.

Dr. H. R. G. POATE (Sydney) read a paper on first aid and the transport of the sick and injured. He traced the development of ambulance work in New South Wales following upon the establishment in 1893 of a centre of the St. John Ambulance Association. He said that the Civil Ambulance and Transport Brigade had been initiated By 1903 this body had become well established and in 1904 it had amalgamated with the St. John Ambulance Brigade and had become the Civil Ambulance and Transport Corps of the St. John Ambulance Brigade. This it had remained until taken over by the Ambulance Transport Board of New South Wales in 1919. Dr. Poate showed how this board was constituted and said that the total now this board was constituted and said that the total revenue raised by the thirty-one districts of the board for 1928 had been £79,393 and that the Government grant for that year had been £28,499. The total expense for the service in the State had been £94,117. For this amount 96,659 ambulance calls had been answered and a distance of 804,588 miles had been travelled. According to this it had cost approximately two shillings and sixpence to transport an invalid one mile. He did not think that this was excessive. With the advent of a hospitals commission a survey of the State would shortly be made and it might be expected that a greatly augmented ambulance transport service would be created. It was not possible to say how such a body would be controlled, but it might be suggested that some provisional delimitation of district boundaries should be made as a guide for the necessary expansion of ambulance transport.

Airway Ambulances.

Dr. Robert Fowler (Melbourne) read a paper on ambulance airways. He said that the ambulance problem was essentially one of transport. The successful field ambulance officer was one who familiarized himself with the capabilities and limitations of whatever form of transport he had at his disposal. Aviation transport had materialized to such an extent that organized air ambulance work could be regarded as an accomplished fact. No officer in any of the services should be unaware of the possibilities of medical aviation or devoid of interest in the enlargement of its scope. The activities of an air ambu-lance unit were the rearward carriage of sick and wounded and the forward carriage of special medical personnel, drugs and appliances. Dr. Fowler described the different types of aircraft available, the lighter and heavier than air and gave particulars of their cost and of the work which they could do. He then referred to the fact that 80.7% of wounded had been returned to duty in the Great War and that 93.3% of sick had also resumed duty. He held that aerial ambulances would undoubtedly be the means of saving life and sparing suffering not otherwise possible, especially in small wars of an open character in less traversed country. To such humanitarianism ought to be added the purely military accruements resulting from the saving of man power, the heightening of morale and the lessening of traffic on roads already encumbered. The conditions under which campaigns in Palestine and in Morocco had been waged, were in many respects similar to those governing the tropical and subtropical parts of Australia. The large open spaces and the break of railway gauge provided the very problem that air transport could solve. Dr. Fowler then discussed the question of red cross immunity for aerial establishments. He showed that it would be advisable to adopt airships rather than aeroplanes in many instances. He concluded by discussing the basis of a war organization such as an aerial ambulance colony which could by appropriate multiplication be expanded into an ambulance squadron or wing.

Antimony Tartrate in the Treatment of Ulcus Molle Serpiginosum.

DR. LOCKYER POTTER (Melbourne) read a paper on antimony tartrate in the treatment of ulcus molle serpiginosum. He said that during the war period he had had under his care six patients suffering from extensive serpiginous ulceration secondary to chancroid infection in the tropics. In the first three instances the patients had undergone

prolonged antisyphilitic treatment without avail. Neither the incubation, the result of the Wassermann test, nor the mode of the development of the lesions had provided evidence as to syphilis being the cause. He had treated the condition successfully with antimony tartrate after seeing it described in a book by J. E. R. McDonagh. He understood that the condition was often confused with granuloma inquinale.

Gas in Warfare.

Dr. F. A. Maguire (Sydney) read a paper on gas in warfare. He said that without doubt gas would be used in future wars. The protests against gas warfare were merely an echo of the days when the knights in their armour plating had objected to the introduction of gunpowder as a new comparatively inhumane feature of warfare. Many arguments had been put forward in favour of the use of gas. It was economical in production. It was claimed to be more humane in its action than high explosives or bullets; in fact, during the recent war it had been shown to be twelve times as humane as the traditional methods of warfare. It could be used to disable or put out of action an enemy without necessarily killing or destroying him. Moreover, gas did not destroy property and this would appeal to all nations. In regard to the effects of gas both the moral and physical results had to be considered. On trained troops the effect was very rarely in the nature of a panic. It should be their aim to train the civilian population, so that they would know what steps should be taken in order to protect themselves against serious damage. Dr. Maguire then considered the various types of gas, the lung irritants, the eye irritants and the skin irritants and described the symptoms resulting from each. He described the box respirator and made reference to the importance of protective clothing. The protection of the civilian population particularly in time of emergency required the careful consideration of measures for what might be called collective protection. If there was plenty of notice that war was impending, it might be possible with proper organization to issue a respirator to every individual citizen and to instruct each person in its use. In sudden emergency this would, of course, be impracticable. The governmental authorities should give serious consideration to the whole question and should take such steps as might be required to lay in a very considerable store of reserves in the way of box Dr. Maguire discussed methods of deconrespirators. tamination of earth and grass lands, of roads, of wooden floors, of concrete floors, of walls, of steel and iron work and of clothing. He also described the methods of protection of food supplies. He referred to treatment and to methods which should be undertaken for the dissemination of knowledge in regard to the whole subject.

Aviation.

DR. A. P. LAWRENCE (Melbourne) in discussing aviation from a medical aspect, said that as a general proposition the man who was successful in sport, was successful in flying. A sound nervous system, steady hand, keen eyesight and good judgement were the qualities required. The international standards for commercial flying were summarized. They included a good family and personal history, no gross disability, no active signs of syphilis, 100% vision in each eye, with normal ocular poise, fields of vision and colour perception, 100% auditory acuity, with intact vestibular mechanism and healthy nose, throat and mouth. Dr. Lawrence gave instances to prove the necessity of nervous stability, a vestibular mechanism that was intact, not hypersensitive, and equal on both sides, a normal cochlear apparatus and labyrinth, normal colour vision, the absence of exophoria and normal ocular responses. He cited the details of men who had flown and had applied for a licence, but who had night blindness. In the early days difficulties had been experienced in estimating the mental aptitude of candidates. relied on the simple reaction time obtained by d'Arsonval's chronometer for visual, tactile and auditory stimuli. Reid's plan of estimating the reaction time in a dummy cockpit yielded the best results, but the apparatus was expensive. No other occupation made a greater demand on the

physical and mental condition of the individual. A thorough examination by a physician, an ophthalmologist and an otologist and a careful assessment by a board of medical practitioners conversant with flying conditions and with the international medical requirements for air navigation formed the best basis on which pilots should be selected.

Aviation in Relation to the Public Health.

Dr. F. McCallum (High Commissioner's Office, London) read a paper on aviation in relation to the public health. He pointed out that aircraft meant above all increased and increasing speed of transport. One of the earliest recorded results of increased communication was a spread of communicable disease. The history of influenza provided an example of the epidemiological importance of increased speed and volume of transport. The rigid quarantine of the old days had become unfeasible and the patient with an incubating illness had to be admitted into the general life of the community. Every new arrival could and in certain circumstances should be kept under medical surveillance, but the deten-tion of every arrival from an infected country would invalidate the whole system of modern transport, the essence of which was speed. The Commonwealth Quarantine Act definitely defined a vessel for the purposes of the act as "any ship, boat or other description of vessel or vehicle used in navigation by sea or air." Thus the strict system of quarantine in force in Australia applied equally to arrivals by air and water. Similar provisions operated in some other countries. The wider aspect of included international cooperation and The subject had been considered by the quarantine included uniformity. permanent committee of L'Office International d'Hygiène Publique at Paris and important recommendations in regard to quarantine had been made. The matter had also been considered at the International Congress on Sanitary Aviation in Paris in May, 1929. The congress had decided that the nations represented would do all The congress that they could to develope air ambulance work in their respective countries, that air ambulances should have priority in any service which could expedite their journeys, and should be free from frontier restrictions in peace time, that a policy of expanding the number of landing grounds should be adopted, that the structure and internal arrangements of commercial aircraft and air ambulances should be such as to render them easy of mutual conversion, that public support, material and moral, should be given to companies and private concerns undertaking to construct ambulance aircraft, that the situation of ambulance aircraft under the Geneva Convention should be regularized as soon as possible. Dr. McCallum described means other than those of ambulance service in which aircraft could be of service. He concluded by stating that in Australia the quarantine aspect was being carefully watched and was for the time being safeguarded. The safeguarding of those carried, whether passenger or patient, should be considered from the physiological point of view as well as in regard to accident prevention.

Advanced Operating Centres with Mobile Troops.

Dr. J. Colvin Storey (Sydney) read a paper on the value of advanced operating centres with mobile troops. He gave a graphic account of his experiences with the Desert Mounted Corps Field Operating Unit which he had organized and commanded. He described the heavy Wolseley motor car with its equipment of surgical instruments and sterilizers and autoclave and the method of improvizing an operating theatre under canvas at the back of the vehicle. In one series of operations twelve patients had been operated on for abdominal wounds within twelve hours of their infliction, seven had recovered and five had died; five had been operated on between twelve and twenty hours after the infliction of the wound, two had recovered and three had died; of nine operated on between twenty and twenty-eight hours after the infliction of the wound all had died; three patients operated on over twenty-eight hours after the infliction of the wound had died. Of the twenty-nine patients with abdominal wounds six had been moribund on admission. Thirty-three other operations had been

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performed; among these there had been seven amputations and six patients had recovered. In another series of thirty-four operations six patients had been operated on within six hours of the infliction of abdominal wounds, four had recovered and two had died. Fifteen patients had been operated on for other wounds within twelve hours of their infliction, eleven had recovered; three of those who died had been moribund on admission. Four patients had been operated on between twelve and twentyfour hours after the infliction of abdominal wounds; all had died. Four patients had been operated on after the same interval of time for other wounds; two had recovered. Two appendicectomy operations had been undertaken for acute appendicitis and both patients had recovered. As a result of his experiences he was convinced that a mobile operating unit with its own staff, equipment and transport was a very necessary part of the medical service of armies engaged in open warfare. Such a unit should be in the charge of an experienced surgeon with army training and he should have a competent anæsthetist with him.

The End Results of War Nephritis.

Dr. S. F. McDonald (Brisbane) read a paper on the end results of war nephritis. He based his remarks on the results of examination of 116 patients suffering from urinary disturbance whose condition he had investigated. Of these 104 had given a definite history of nephritis, four had suffered from pyelonephritis and eight had had no manifestations of nephritis; they had been referred for examination because renal disease was suspected, mainly on account of pain in the back. In 58 instances the condition had become manifested in France as acute nephritis and in three after some unknown febrile illness. In the other theatres of war primary nephritis had become manifest in eleven instances, on two occasions in England; on one occasion the condition had been secondary to other diseases and in six, possibly seven instances it had followed malaria. The condition of six had been dis-The condition of six had been discovered on their discharge and of nineteen subsequent to their discharge. Dr. McDonald concluded that in the Australian soldier nephritis was a disease which threatened to leave permanent damage in the form of a chronic fibrosing nephritis. He said that in the majority of instances chronic disease tended to progress to a fatal conclusion in under ten years, death being frequently due to uræmia. The cases in which death had occurred were tabulated. All six patients whose nephritis had followed malaria, had died. Twelve out of fifty-eight or, if the two whose illnesses were discovered in England were included, fourteen out of sixty who suffered from trench nephritis, had died. Treatment, dietetic or otherwise, seemed to be of little value. The most important factor had been freedom from physical and mental stress. Dr. McDonald had found that the ordinary renal efficiency tests had been of value when the disease was advanced, but of little value in the early stages. The danger signs in order of their distance from the fatal issue had been raised blood pressure, neuro-retinitis and a blood urea concentration above 200 milligrammes per hundred cubic centimetres.

MEDICAL HISTORY AND LITERATURE.

Animism and Determinism.

Dr. F. Guy Griffiths (Sydney) in a paper on animism and determinism in modern medicine defined the former as the philosophic doctrine of primitive man who attributed all life and motion to spirits. Everything to him was animated and all force was vital force. With the growth of knowledge came the substitution of a mechanical for a volitional interpretation of Nature. The uniform action of inviolable law had replaced caprice. All events were determined by preexisting causes. Determinism was the complete application of the principle of causation to human nature. Not everyone had subscribed to the doctrine of determinism. Some still asserted the existence of free will. But even psychology was becoming increasingly deterministic. Dr. Griffiths stated that there were three

aspects of modern medicine concerned with the two doctrines. The first was concerned with the physical or psychical treatment of mental disorders. The second was encountered in the handling of persons the subjects of traumatic neurasthenia. He discussed the problem whether a fixed idea prevented a physically fit man from working and whether the cure lay in the application of a strong opposing force. The third aspect was that of criminal responsibility. He adduced argument in favour of restraining or correcting punishment. He admitted the deterministic value of responsibility.

The Renaissance and Medical Progress.

Dr. James Young (Invercargill) endeavoured to trace in his paper the influence exercised by the intellectual writers of past ages and of the leaders of thought at the time of the Renaissance on medical progress. lated the principle that in ancient Greece the body of knowledge had formed part of the active mind of the people, while in the post-Roman period the Europeans had manifested a receptiveness of authoritative doctrine. The scholastic method was not originative. He demonstrated that in the thirteenth and fourteenth centuries medical writers made no real progress, but relied on the teachings of the great masters of the Grecian and Arabian eras. As far as Dr. Young could discover, the Renaissance of learning had little effect on the development of medical knowledge. The few men who dared to put forward original views, were ignored. He traced the influence of the revival of Greek learning and the introduction of the printing press on the times and found that it led rather to an accentuation of the adherence to authority than to the development of free thought and investigation. Travelling had a better influence in those days and appeared to have awakened an interest in natural science. He told the story of Pierre Brissot to illustrate the working of the medical mind of the period. The first important event that created a need for self-reliance and originality in thought was the recognition of new diseases, plagues that had not been described by the ancients and for which there was no authoritative doctrine. Meningitis, diphtheria and syphilides aroused fear and interest. Plague and leprosy forced themselves on the attention of the people. There were isolation houses for these two diseases and later the measures of protection against them and other contagions were conducted in these houses. Infection was regarded as the punishment for sin, a letting loose of the Evil One on a wicked people. At first there were five and later eight morbi contagiosi. In the fourteenth century plague was admitted to the group and protective measures were adopted. It was not till the end of the sixteenth century that the inductive method of acquiring knowledge became prevalent. The Renaissance of learning and the printing press had contributed nothing directly to medical science, although the germ of individual thought was noted before the period of scholasticism had

Thomas Arndell, Surgeon on the First Fleet.

Dr. John MacPherson (Sydney) read a paper entitled: "Thomas Arndell, Surgeon on the First Fleet." He described the work of Arndell from the time of his arrival until his retirement and dealt with the part which he played in important episodes during that time. He told how Arndell had to supplement his salary by work on his own farm. He referred to the Atkins-Macarthur controversy and to the Bligh rebellion. He mentioned the various spheres of activity in which Arndell was engaged, and finally he told of the brawling of a settler named Doyle at Arndell's funeral. For this Doyle received a sentence of three months' imprisonment.

Henry Cowper, Surgeon, and His Times.

A paper had been forwarded by Dr. E. Sandford Jackson (Brisbane). Dr. Jackson wrote that Henry Cowper was the first student and the second man to graduate in medicine in Australia and the first surgeon of the Moreton Bay settlement. Henry Cowper had been apprenticed to William Redfern in 1814 at the age of fourteen. He was the first medical student in Australia and no one before

or since had entered upon the study of medicine at such an early age. Cowper had become assistant in 1817 and assistant surgeon in 1820. He had then travelled to England and become a member of the Royal College of Surgeons in London. In 1826 he had gone to Moreton Bay and had remained there probably until 1833. It was supposed that he had died between the years 1851 and 1855.

ADDENDUM.

Pulmonary Disease in the Mining Industry.

THROUGH an oversight we neglected to include the summary of a paper by Dr. H. G. Chapman that was read at the first meeting of the Section of Preventive Medicine and Tropical Hygiene, after Dr. Keith Moore had opened the debate on pulmonary disease in the mining industry. Dr. Chapman gave a general account of the results of chemical analyses of some eighty lungs of persons not unduly exposed to dust, of persons who had worked along the line of lode at Broken Hill, of persons who had worked in sandstone and quartz. The development of silicosis was supposed to depend on the content of silica in the inspired air. Microscopical examination had revealed that silicosis started in isolated areas and that the intervening tissues between the silicotic areas were free from particles of silica. Chemical analysis had revealed the fact that there was no accumulation of silica in the lungs until there was pathological evidence of the early stages of Even after twenty years' exposure to silicacontaining dust, there was often no macroscopic or microscopic evidence of silicosis. The percentage of silica in the lungs of miners bore no relationship to the length of exposure to the silica-containing dust. Dr. Chapman suggested that the larger particles of silica were collected on the moistened walls and ciliated epithelium and removed in the mucus expelled from the air passages. The disappearance of the finer particles could be effected by their passage into the lymph channels or blood stream or they could be swept gradually into the bronchi and trachea. In order to trace the silica, use was made of the fact that the silica was mixed with minute quantities of lead in the dust inhaled by the Broken Hill miners. From 0.1 milligramme to 0.5 milligramme of lead was found in the urine excreted in one day by the miner. He therefore concluded that in some individuals silica was absorbed in the lungs without giving rise to silicosis. He found that silicosis did not develope in pulmonary areas already the seat of tuberculosis. Silicotic changes were uniformly distributed throughout the lung, while pulmonary tuberculosis was rarely distributed throughout the whole lung. Pulmonary tuberculosis tended to start in the apices of the lungs, while the apices were the last areas to be affected by silicosis.

The Medical History of the War.

At the plenary meeting held on September 3, 1929, COLONEL R. GRAHAM BUTLER said that he had sought the opportunity of saying a few words on behalf of the Minister for Health and himself in bringing to the notice of the members the fact that in the course of a few months they would publish an Australian medical history of the war. In due time the medical profession would receive notice of this book, but the Minister thought it opportune that the psychological atmosphere of Congress was an opportune moment of letting it know that this task which had been long deferred, was nearing completion. The book would be in two volumes. The first would be published in the course of a month or two and the second a little later. It would be remembered that during the war it had been decided by the official historian and agreed to by the Commonwealth Government that there should be histories of the technical services of the Australian Imperial Force, as well as a general history; special officers had been detailed to acquire material for these tasks. The project had been dropped after the war but had been revived by their late friend and very honoured colleague William Thornborough Hayward and by another very honoured colleague who was happily still with them, Dr. R. H. Todd. The project had been brought forward

again and it had been proposed that the profession should take part in financing the medical history of the war. However, after some talk it had been agreed that the Government should take on the task of producing this history and as editor of the two volumes he was able to state that the Government had been exceedingly generous in the matter. It had been forbearing, as had the medical profession. The work would stand on its own merits; he had nothing to say in extenuation of any defects. He had been given a free hand and the writers had been treated generously as regards time and otherwise, so that if it was not up to standard, it should be, as far as the Government was concerned and as far as the former Minister for Defence, Sir Neville Howse and the present Minister, Sir William Glasgow, were concerned. The first volume was in three parts. In the first he had dealt with Gallipoli, in the second with Palestine and in the third with the islands in the Pacific. Each had been treated in a new way. The material available for Gallipoli and Palestine was a study of the light horse in action; the Pacific was very important and far-reaching in its These matters had been dealt with up to the effects. present. The volume was not intended entirely for medical officers or those connected with the service. The war was a phase of human resistance and although all the problems of the medical profession occurred in war, the interest was raised to a white heat and the problems of their ordinary medical life were recurring phases in war, which made the work more interesting than otherwise. Minister hoped that the production would be availed of by the whole of the profession and also that the intrinsic side of the subject would be appreciated, in order to make up to some extent the very large expenditure of the Government in the production of as many volumes as there are medical men in Australia. Those who desired to possess the two volumes, on subscribing beforehand would be able to get them at a reduction.

The Congress Buseum.

THE main museum, the obstetric section and the exhibit of the Committee of Scientific and Industrial Research were organized by the Honorary Secretaries of the Museum Committee, Dr. W. Keith Inglis and Dr. A. H. Tebbutt. An immense amount of work was involved in the planning, displaying and arranging of the exhibits. An account of the museum will be published in a subsequent issue.

The Trade Exhibition.

THE Trade Exhibition Committee had at its disposal two rooms and some corridor space and allotted a measured amount of this space to the various exhibiting firms. The following is a list of exhibitors with some indications of the goods displayed.

Surgical Instruments.

ALLEN AND HANBURYS (AUSTRALASIA), LIMITED, exhibited a large range of surgical instruments made of stainless steel, including suture needles. Their "Universal Diagnostic" set for eye, ear, nose and throat work was also shown. All the varieties of the London Hospital catgut and Soutar's eyeless needles were also displayed.

DENYER BROTHERS showed an assortment of surgical instruments, artificial limbs and orthopædic appliances. In addition this firm placed on view Cameron's "Electro-Diagnostosets," well known electric apparatus for diagnostic purposes, "Equisetene (Scarless)" sutures and Leslie's British zincoplast strapping.

LAMSON STORE SERVICE COMPANY, LIMITED, demonstrated a full range of "Acousticon" hearing aids for the deat, from the single transmitter type for persons slightly hard of hearing, to the "Multiple Acousticon" for persons with advanced deafness. Some "Silver Anniversary Model

Acousticon" instruments, with receivers "as small as a sixpence," were also shown.

LUDBROOK AND SON had a display of surgical instruments.

MARTIN AND COMPANY had an exhibit of stainless steel surgical instruments.

H. B. Selby and Company, Limited, had a large exhibit which included Hearson's bacteriological incubators, centrifuges and embedding bath, Reichardt's and Spencer's binocular microscopes and pocket microscopes, microcopes, hæmocytometers, hæmoglobulinometers, epidiascopes, spectroscopes, colorimeters, anatomical models and charts, specimen jars, weighing machines, scales, laboratory glassware and Merck's chemicals, stains and sugars.

W. E. Steel-Smith had an exhibit of Krupp's chromium steel instruments, including scissors, curettes, scalpels, artery forceps, surgical dressings and cutting forceps, laryngeal all-steel mirrors and other instruments. All these instruments retain their polished appearance and are immune from rust under all circumstances and can be sterilized in the flame. In addition Krupp's V2A steel injection syringe needles and suture needles and Jena glass syringes with steel pistons were shown. These can be boiled without any fear of breakage.

Andrew Thom had a stand calling attention to his scientific apparatus.

X Ray and Electrical Apparatus.

GAIFFE, GALLOT AND PILON placed on view their X ray and diathermy plant.

GLOBIA LIGHT X-RAY COMPANY OF AUSTRALASIA had a large exhibit of "Sanitas" X ray apparatus, including a "Sanitas" single valve unit, the "Gloria" combination X ray Bucky table, made in Australia, a "soft ray" unit, a portable diathermy unit, a cabinet diathermy unit, a "Metalix" portable unit with tube stand and a Bowker developing unit (practitioner's model).

HOSPITAL, ELECTRIC AND RADIUM, LIMITED, displayed various Engeln Electric Company apparatus, including a complete X ray unit for small hospitals, including a transformer, an overhead mast, control panel, Potter-Bucky diaphragm and a vertical screening attachment, a Kelly-Koett portable X ray unit, a vertical screening stand with control panel and transformer, a large Engeln cabinet diathermy apparatus, a portable medical diathermy apparatus and a true diathermy surgical cutter. They also showed a Rubin's insuffiation apparatus.

Kodak (Australasia) Proprietary, Limited, had an elegant display of photographic material of interest to the radiographer and clinical photographer. The exhibit included X ray negatives made on "Kodak Dupli-Tized" X ray films manufactured in Australia, X ray accessories, such as cassettes, developing tanks, chemical preparations, weighing and timing devices, film hangers, mounts and viewing boxes, a clinical camera with accessories designed for laboratory and operating theatre work, a range of films and plates from slow contrast varieties to rapid highly colour sensitive and pancreatic types, and a "Kodascope." A continuous exhibition was given of sixteen millimetre "Ciné-Kodak" pictures dealing mainly with medical and surgical subjects. These were shown in full daylight.

PHILIPS LAMPS (AUSTRALASIA), LIMITED, had as the chief exhibit the firm's "Metalix" X ray tube. This tube affords complete protection to the users against primary radiation. The portable X ray unit designed and constructed by the firm's engineers was also placed on view. This unit possesses protection from undesired radiation and is proof against electrical shock. It is claimed that the unit is safe for both the radiographer and the patient.

The Solus Electrical Company placed an exhibit of English manufactured X ray apparatus on view. There were a ten kilovolt valve-rectified set with control table (dual control), a ward trolly set fitted with heating transformer and guard and "Metalix" tube, a screening stand with special arched frame for thorax work, a "Simplex" screening stand with cassette attachment, and a special table for urological X ray work with flat Potter-Bucky diaphragm. The firm also placed on view diathermy apparatus and other electro-medical plant.

STANFORD X-RAY AND RADIUM COMPANY, PROPRIETARY, LIMITED, exhibited the firm's "six-sixty" transformer and rectifier unit with spark gap, a "Metalix" portable X ray unit, with timer, cassette and screens, diathermy apparatus and other electro-therapeutic apparatus.

W. WATSON AND SONS, LIMITED, exhibited a Watson-Caldwell valve-rectified X ray apparatus for diagnostic work, of Australian manufacture, as well as a large display of X ray equipment, physical therapy plant and electrocardiographs, the Snook X ray transformer, a stabilized portable unit, a dental unit, an "Asciatic" lamp for surgical operating theatres, diathermy machines, ultra-violet lamps and electrocardiographs.

Pharmaceutical Preparations.

ALLEN AND HANBURYS (AUSTRALASIA), LIMITED, showed some new pharmaceutical preparations including "Kapsol" liver extract, "A.B.A." injections for pruritis ani, quinine and urethane and quinine and urea in solution for varicose veins, "Iodolysin," "Insulin A.B." and various medicated pastilles.

THE AUSTRALIAN OXYGEN INDUSTRIAL GASES PROPRIETARY, LIMITED, had an exhibit of anæsthetic gas apparatus, ethylene and oxygen and nitrous oxide and oxygen.

Bubroughs, Wellcome and Company (Australia), Limited, displayed many of their fine chemicals, pharmaceutical preparations and glandular products in "tabloid" form

COMMONWEALTH SERUM LABORATORIES placed on view samples of biological products manufactured at the laboratories at Royal Park, including serum and vaccines.

CONTINENTAL DRUG COMPANY, LIMITED, had on view "Tricalcine," plain, in powder, in chocolate coated tablets, in granulated form and in cachets, as well as adrenalized methylarsinated, fluorated "Tricalcine," a protoxalate of iron with yeast and cod liver oil called "Oleocal," and a bismuth preparation, soluble in distilled water, called "Quinby," also in olive oil suspension.

DENVER CHEMICAL MANUFACTURING COMPANY had an elegant display of "Antiphlogistine."

Deshell Laboratories, Incorporated, arranged on a stand the four varieties of "Petrolagar," an emulsion of agar and petrolatum. A bright colour scheme in red, blue, old gold and white banners was employed to attract attention. A coloured illustration by Tom Jones of the large intestine added to the pleasant appearance of the exhibit.

ELLIOTT BROTHERS, LIMITED, as agents for G. W. Carnrick Company, exhibited several single gland products as well as "Hormatone," a pluriglandular preparation, "Trypsogen," a pancreatic preparation, and "Viriligen." These preparations are sold in tablet form.

ELLIOTT BROTHERS, LIMITED, as agents for the Society of Chemical Industry in Basle, put up an exhibit of the "Ciba" preparation, including "Dial Ciba," a barbituric acid derivative, and compounds of "Dial," "Didial" and "Cibalgin." Among other preparations were "Sistomensin," a standardized ovarian preparation, "Agomensin," a water-soluble ovarian extract, "Prokliman," a new compound of "Sistomensin" for menstrual disorders, and "Coramine," a cardiac and respiratory stimulant, soluble in water.

F. H. FAULDING AND COMPANY, LIMITED, displayed their well known lines of "Solyptol" antiseptic, "Solyptol" soap, olive oil, "Regional Isotone," a new preparation in tablet form of procaine, adrenal chloride and sodium chloride for regional anæsthesia involving a large area.

ELI LILLY AND COMPANY'S exhibit was displayed by Charles Markell and Company. It contained Eli Lilly "Insulin," liver extract and other products of this firm.

KARNA VITA COMPANY had an interesting exhibit of "Karna Vita," the Australian made desiccated ox liver. The exhibit comprised the product in the several stages of preparation as well as the finished article. This preparation has been the subject of a report in this journal.

MACLAY BROTHERS had an elegant exhibit of some of the products of the Anglo-French Drug Company, the Dimol Laboratories and Genatosan Limited. The preparations included "Stannoxyl," "Sulfarsenol," "Pharmasols" (col-

loids), "Oliolase" and "Ambrine" among many others. 'The exhibit was relieved by the Labat syringe outfit for regional anæsthesia with "Néocaine." The exhibit also included specimens of detoxicated vaccines and of "Dimol," an intestinal antiseptic.

MARTIN AND COMPANY showed some of David G. Bull's "Hermette" products and Beiersdorf's preparations, including "Leukoplast," "Hansaplast," "Aolan" and "Pandigal."

Mulk and Neil, Limited, had a comprehensive display of the products of Oppenheimer, Son and Company, Limited, including "Roboleine," the firm's "Bipalatinoids," "Oscol Manganese," glandular preparations, "Pinheroin," "Thymotussin." The exhibit also contained the preparations of Jeyes' Sanitary Compound Company, Limited, including "Cyllin Medical," Jeyes' "Lysol," Jeyes' antiseptic shaving cream, dental cream and soap. There were also displayed surgical ligatures, dressings and other material manufactured by Cuxson, Gerrard and Company, Limited. All the exhibits on this stand were British goods.

SALMON AND SPRAGGON (AUSTRALIA), LIMITED, agents for A. Wander, Limited, displayed to good advantage "Ovaltine," "Ovaltine" rusks, "Alocol" tablets and powder, "Jecomalt," a cod liver oil and malt extract preparation, and "Cristolax."

Pepsodent (Australia), Limited, put on view an attractive exhibit of the firm's tooth paste, an acid preparation concerning which full information has been published in the pages of this journal. The exhibit included specimens of the tooth paste in the successive stages of manufacture. There was also on view a deodorant preparation known as "May Breath" tablets.

PARKE, DAVIS AND COMPANY'S striking display was one of extreme interest, as it was widely representative of products both pharmaceutical and biological manufactured by this house. The part played in the field of research was noted in products such as "Pitocin," "Pitressin," scarlet fever antitoxin, "Immunogens," "Hæmostatic Serum" and adrenalin.

THE WOOLWICH-ELLIOTT CHEMICAL COMPANY, LIMITED, exhibited the "Woolwich" and the "Elliott" brands of anæsthetic ether and ethyl chloride. Associated with this exhibit were some photographs of the plant utilized in the manufacture of these ethers. In addition samples of collodium, ozonic ether, absolute alcohol, amyl alcohol, amyl nitrite capsules, aromatic ammonia capsules, ethyl nitrite used in the preparation of spirit of nitrous ether, etherized liquid soap and a mouth wash and gargle called "Perthymo."

Surgical and Hospital Furniture.

ALLEN AND HANBURYS (AUSTRALASIA), LIMITED, made the most of one of the Saint Bartholomew's Hospital pattern operation tables of the latest model, complete with all accessories, including an adjustable head clamp.

JOHN DANKS AND SON, PROPRIETARY, LIMITED, put in the chief place on the stand a Roche operating table with all the adjustments needed for modern work. In addition aseptic lavatory basins with hot and cold water, pedal valves and knee action waste, both with metal and fireclay containers. The exhibit also contained bed pan sink, irrigation stands and dressing table.

Hannam's, Limited, showed two pedestal type operating tables, the one worked by a foot pedal and the other by a hand lever. Both are manufactured in Australia. Other exhibits were an anæsthetist's stool, with a nickel-plated seat and frame, an infusion stand with graduated container and tray, a nickel-plated lotion bowl and instrument tray table, a three bowl lotion stand and an adjustable tray with bowl attached, nickel-plated throughout.

MARTIN AND COMPANY exhibited a pedestal operation table and a gynæcological table.

Food Preparations.

ALLEN AND HANBURYS (AUSTRALASIA), LIMITED, had as well as the other exhibits mentioned above, a good display of "Allenburys" foods. The diabetic foods prepared from "Allenburys" diabetic flour, as well as the firm's foods for infants and foods for adults and "Byno" tonics deserve mention.

THE DAIRY FARMERS' CO-OPERATIVE MILK COMPANY, LIMITED, exhibited at their stand pasteurized country milk in half and one pint bottles, rich pasteurized cream in quarter, half and one pint bottles, also choice butter, free from any preservatives, packed by machinery in half and one pound cartons. The exhibit was intended to bring under the notice of the medical profession how milk and milk products can be produced of a high quality and handled and distributed in a sanitary way.

F. H. FAULDING AND COMPANY, LIMITED, exhibited on their stand "Vi Milk Clinic Emulsion," "Lactone Syrup" and "Lactone Syrup" with maltose preparations of dextrose and lactic acid. The latter preparations are used largely for modifying fresh cow's milk in the feeding of infants.

NESTLÉ AND ANGLO-SWISS CONDENSED MILK COMPANY (AUSTRALASIA), LIMITED, focused the attention of the visitors to a series of charts prepared in the laboratories depicting the effect of feeding with fresh cow's milk, with condensed milk and with "Lactogen." A series of photographs was displayed to illustrate the various points in connexion with the utilization by infants of "Lactogen." Prominent among these photographs were those showing the differences between the soft, small curd of "Lactogen" contrasted with the larger and harder curd of cows' milk. The process of manufacture of "Lactogen" was shown by photograph and other means including a cinematograph display.

Surgical Corsets and Boots.

Berlei, Limited, had an exhibit of surgical supports and corsets. A display of moving pictures illustrated the principle on which the supports had been designed. Special corsets for ptosis of pregnant women, for post-operative wear and for other special purposes were shown and displayed. A private demonstration on living models was given at Berlei House.

Jackson's, Limited, displayed to advantage Stonewall shoes on foot shape lasts for men, women and children. They had been designed on scientific principles to meet the demand for a natural walking base on perfect foot shape lines. They admitted of an easy and unrestricted motion of the bones of the foot and a free action of the foot muscles, thus admitting an even distribution of tread.

Books.

ANGUS AND ROBERTSON, LIMITED, had an exhibit of medical books and publications dealing with special branches of medical study.

BUTTERWORTH AND COMPANY (AUSTRALASIA), LIMITED, had an exhibit of books.

Transactions of Congress.

THE Transactions of the third session of the Australasian Medical Congress (British Medical Association), Sydney, 1929, will be issued by the Executive Committee to members of the session. On two previous occasions the transactions have been published as supplements to The Medical Journal of Australia. They had in consequence a relatively large circulation in Australia and New Zealand.

According to the rules adopted by the Federal Committee, a complete typewritten copy of all papers had to be in the hands of the honorary secretaries of the sections not less than thirty days before the date fixed for the inaugural meeting of the session. We understand that many authors of papers read at meetings of the sections did not comply with this rule. In the foregoing summary of the proceedings reference has been made to papers that were read but not handed in by their authors. These papers will not be included in the Transactions. There is another rule fixing a time limit to papers. Many of the papers handed in to the secretaries of the sections are very long and could not have been read in the prescribed time. The longer papers will appear in abbreviated form in the Transactions.

By special arrangement with the Executive Committee a few papers read at Congress will be published in this journal and summaries will be inserted in the Transactions.

British Wedical Association Dews.

MEDICO-POLITICAL.

MEETING OF THE FEDERAL COMMITTEE.

A MEETING OF THE FEDERAL COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION IN AUSTRALIA WAS held on September 2, 1929, at 21, Elizabeth Street, Sydney, Sir Henry Newland, C.B.E., D.S.O., in the chair.

Representatives.

The following representatives of the Branches were present:

New South Wales Branch: Dr. R. H. Todd, Dr. J. Adam Dick, C.M.G.

Victorian Branch: Dr. F. L. Davies, Dr. J. Newman Morris.

Queensland Branch: Dr. D. Gifford Croll, C.B.E., Dr. E. S. Meyers.

South Australian Branch: Sir Henry Newland, C.B.E., D.S.O., Dr. Bronte Smeaton.

Western Australian Branch: Dr. F. A. Hadley, Dr. D. D. Paton.

Tasmanian Branch: Dr. Gregory Sprott, Dr. H. W. Sweetnam.

The Death of George Adlington Syme.

DR. R. H. Tonn referred to the great loss sustained by the Federal Committee by the death of George Adlington Syme. He had been in the chair at the last meeting of the Committee and the news of his death had shocked all the members. The Victorian Branch Council had made arrangements for each of the States to be represented at the funeral and at the memorial service held later. The Federal Committee had been represented at the funeral by Dr. F. L. Davies and Dr. R. H. Fetherston and by Sir Henry Newland at the memorial service. The several Branches had been represented and had sent messages of sympathy.

SIR HENRY NEWLAND asked the members to pass a formal resolution of sympathy and regret at the death of George Adlington Syme and to forward this resolution with a suitable letter to Lady Syme. The motion was seconded by Dr. Gregory Sprott and was carried, all the members standing in silence.

Election of Chairman.

On the motion of Dr. R. H. Todd, seconded by Dr. J. Adam Dick, Sir Henry Newland was appointed Chairman of the Federal Committee.

On the motion of Dr. J. Adam Dick, seconded by Dr. G. Sprott, Dr. J. Newman Morris was appointed Vice-Chairman.

Financial Statements.

The statement of receipts and payments of the Federal Committee for the six months ended June 30, 1929, the statement of the Accumulated Funds Account of the Australasian Medical Congress (British Medical Association) and the financial statements of the Medical Officers' Relief Fund (Federal) were presented.

Conference on Contract Practice.

DR. E. S. MEYERS sought leave to move as follows:

That the Federal Committee shall receive and consider any resolution that may be forwarded from meetings of interstate conference of practitioners engaged in contract practice or interested in the welfare of practitioners engaged in contract practice.

The Chairman ruled that the motion could not be accepted. The resolutions referred to were not matters that could be considered by the Federal Committee, as they did not come within the rules governing its procedure. The correspondence was received.

Australasian Medical Congress (British Medical Association).

The Honorary Secretary presented lists of persons who had accepted appointment as patrons, vice-presidents and

FEDERAL COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION IN AUSTRALIA.

Statement of Receipts and Payments for the Six Months Ended June 30, 1929.

Cash on Hand	Coch on Hand
620 8 5	
620 8 5	

Australasian Medical Congress (British Medical Association) Accumulated Funds Account.

RECEIPTS.	£	s.	d.	PAYMENTS.	£	S.	d.
To Balance at December 31, 1928— Government Savings Bank of New South				By Sundry Expenses— Clerical Assistance	7	10	0
Wales			6	Government Savings Bank of New South	377	6	3
, , , , , , , , , , , , , , , , , , , ,	£384	16	3		£384		

(Signed) ROBERT H. TODD,

Honorary Secretary.

Sydney, August 29, 1929.

Audited and found correct.

(Signed) W. H. CRAGO,

Honorary Auditor.

Medical Officers' Relief Fund (Federal).

Balance Sheet as at June 30, 1929.

LIABILITIES.							Assets	3.					
Accumulated Revenue Account—	s.	d.	£	s.	d.		Investments—	£	g.	d.	£	s.	d
Balance at June 30, 1928 11,272 Less Deficiency, Revenue Account, for year	17	11					6%, 1930, Commonwealth Treasury Bonds 5%, 1948, Commonwealth	1,000	0	0			
ended June 30, 1929 41	12	8	11,231	5	3		Treasury Bonds British Medical Association,	250	0	0			
							New South Wales Branch, Building Account Debentures	300	0	0			
											1,550		(
						ĺ	Loans Bearing Interest Fixed Deposit, Bank of New				8,308	9	
						1	South Wales Bank of New South Wales.				1,000	0	
							Current Account Amount in hands of Local				367	16	
		,					Committee, Queensland				5	0	
			£11,231	5	3					£	11,231	5	;

Revenue Account for Twelve Months Ended June 30, 1929.

To Benefactions	£ s. d.	£ s. d. 202 5 0 287 10 0	By Interest on Investments and Loans	£ s. d. 464 11 2 0 13 4	
Audit Fee	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		Balance, Deficit Transferred to		463 17 10
Danie Charges and Dathunge		15 15 6	Accumulated Revenue Account		41 12 8
		£505 10 6			£505 10 6

We have examined the books, vouchers and securities of the Medical Officers' Relief Fund (Federal) and we certify that in our opinion the foregoing Balance Sheet and accompanying Revenue Account are properly drawn up so as to exhibit a true and correct view of the financial position of the Fund as at June 30, 1929, and the transactions for the year ended that date.

Sydney, August 20, 1929.

COATES, CUNNINGHAM AND COMPANY, Chartered Accountants (Australia).

honorary members of the third session in Sydney. The acceptances were noted.

The Honorary Secretary referred to a letter received from the Medical Secretary of the British Medical Association calling attention to the fact that the centenary meeting of the British Medical Association would be held in London in the last week but one of July, 1932. Dr. Alfred Cox expressed the wish that the Federal Committee would not allow the date of the fourth session of the Australasian Medical Congress (British Medical Association) to clash with that date. The President and Council of the Association expressed the hope that many prominent members of the Australasian Branches would be present at the centenary meeting.

The Honorary Secretary also read a letter from the Queensland Branch extending an invitation to the Federal Committee to hold the fourth session in Queensland in August, 1931.

Dr. F. A. HADLEY stated that the Western Australian Branch would wish to issue an invitation.

Dr. D. Paton informed the Committee that there was good prospect that the new university buildings in Perth would be sufficiently advanced to permit the Branch to organize a session in 1932.

SIR HENRY NEWLAND stated that the South Australian Branch had decided to issue an invitation.

Some discussion took place concerning the frequency of sessions of Congress. The opinion was expressed that an interval of three years was desirable. This matter had been discussed by the Federal Committee in 1922 and it

had been found that while the Federal Committee had made provision for the holding of a session every year, every second year or every third year, there would be difficulty in getting the members to communicate papers as often as every two years.

It was moved by Dr. J. Newman Morris and seconded by Dr. F. L. Davies that the date of the next session be fixed at the next meeting of the Federal Committee. Dr. Morris's motion was carried.

Annual Meeting of the British Medical Association, 1930.

The Honorary Secretary read a letter from the Medical Secretary of the British Medical Association informing the Committee that the annual meeting of the British Medical Association would be held in Winnipeg on August 26, 1930. The Council invited the overseas Branches to be represented at that meeting. A section was being formed for the consideration of problems associated with medical sociology and the history of medicine. The subject of the problems of migration within the Empire would be discussed. Dr. Alfred Cox suggested that the Branches in Australia should nominate a representative. He would probably be appointed Vice-President of the Section. Endeavour should be made to select someone who would be able to take part in the discussion. He mentioned that Sir Humphry Rolleston would probably be the President of the Section. A letter had been sent to the several Branches asking for the names of practitioners who might be nominated by the Federal Committee. Replies had been received from the Queensland and Tasmanian Branches

to the effect that they were not in a position to suggest anyone.

SIR HENRY NEWLAND stated that the South Australian Branch did not offer any name.

Dr. J. Newman Morris stated that the Victorian Branch submitted the name of Sir James Barrett. He therefore nominated Sir James Barrett for the position. The nomination was seconded by Dr. F. L. Davies.

A communication from the New South Wales Branch was received suggesting the name of Dr. J. S. Purdy for nomination. It was pointed out that Dr. Purdy had offered a paper on the subject of discussion and that it had been proposed to Dr. Purdy that it would be convenient if this paper were read at Winnipeg. Dr. Purdy had intimated his intention of being present at the annual meeting at Winnipeg.

In view of the information given by the New South Wales Branch, Dr. Morris withdrew his motion and Dr. Purdy was nominated as representative of the Branches in Australia to attend the annual meeting in 1930.

British Pharmacopœia.

The Director-General of Health, in a letter addressed to the Federal Committee, had intimated that the British Pharmacopæia was under revision and that it was proposed to establish an Australian committe to cooperate in the work of revision. The matter had been before the Federal Health Council and it had been decided that the committee should comprise four members, the Director-General of Health, nominated by the Federal Health Council, a professor or lecturer on pharmacology of one of the universities of Australia, a nominee of the Federal Committee and a nominee of the Pharmaceutical Society of The Federal Committee had been informed that Dr. John MacPherson had been nominated to represent the universities. A circular letter had been addressed to the several Branches asking for suggestions in connexion with the nomination by the Federal Committee. The New South Wales Branch had proposed Dr. S. O. Cowen and the Victorian Branch had suggested Dr. J. F. Wilkinson.

Dr. F. L. Davies moved that the Federal Committee nominate Dr. J. F. Wilkinson. He anticipated that there would be a considerable amount of work to be done and that attendance at Canberra would be necessary. He understood that Dr. Wilkinson would have time to devote his energies to this work. The nomination was seconded by Dr. J. Newman Morris.

Dr. R. H. Topp stated that he would withdraw the New South Wales Branch suggestion in favour of Dr. Wilkinson. It was therefore resolved that Dr. Wilkinson's name be submitted as a nominee of the Federal Committee.

Repatriation Department.

Further reference was made to the arrangements made by the Repatriation Commission for the medical attendance on the widows and orphans of deceased soldiers and the widowed mothers of deceased unmarried soldiers through the intermediation of the friendly societies. The Federal Committee had asked the Branches to recommend their members to accept the Repatriation beneficiaries on their friendly society lodge lists. Exception had been taken to the refusal of the Repatriation Commission to pay the mileage charges payable in accordance with the provisions of the Common Form of Agreement by the patient (see The Medical Journal of Australia, May 4, 1929, page 605).

A further letter had been addressed to the Chairman of the Repatriation Commission pointing out that as the Department had voluntarily accepted the responsibility of providing medical attendance for widows and orphans of deceased soldiers and had asked the medical profession to provide this attendance under the conditions governing friendly society lodge practice, it was necessary for the Department to accept the responsibility for the payment of incidental expenses. It was thought that the only incidental expenses would be those of mileage and of afterhour attendance.

Dr. F. L. Davies expressed the opinion that the Committee should not be satisfied until the Department recog-

nized that its obligations included the payment of incidental expenses. It might be necessary to terminate the arrangement. The Victorian Branch hoped that the Committee would take all the necessary steps without referring the matter back to the Branches.

Dr. D. Gifford Croll stated that in Queensland some practitioners found that there was cause for complaint. A few of the beneficiaries were quite well off. Others were chronic invalids including a few who suffered from diabetes. It was held by some practitioners that medical attendance at lodge rates should not be given unless it could be shown that the beneficiaries were in poor circumstances.

Other members of the Committee expressed the opinion that the general application of the arrangement had been a mistake. On the motion of Dr. Bronte Smeaton it was resolved that the matter be left in the hands of the Chairman to be dealt with when a reply had been received from the Chairman of the Repatriation Commission.

A letter was read from the Victorian Branch calling attention to the practice of the Repatriation Department of permitting ex-soldiers to have access to clinical notes concerning them. It was thought that the medical practitioners giving certificates and reports on the results of examination, were unaware that these certificates and reports would be shown to the patient upon demand. The medical profession should be informed of the fact.

Dr. J. NEWMAN MORRIS moved:

That the Repatriation Department be asked to notify medical practitioners that clinical notes are made available for perusal by the ex-soldiers they referred to

It was pointed out that the Federal Committee was not in possession of information that would justify it in taking action. In view of this Dr. J. Newman Morris moved:

That the Victorian Branch Council be requested to supply information in its possession regard to the matter referred to in its letter of August 29, 1929, and that the Honorary Secretary communicate with the Department in the matter.

The motion was seconded by Dr. D. G. Croll and was carried.

The Medical Care of Natives in Central Australia.

A report drawn up by a subcommittete of the Council of the Victorian Branch on the need for medical service to the native population in Central Australia was presented. It was pointed out that Dr. George Simpson had read a paper before a special meeting of the Victorian Branch on May 3, 1929, on the neglect of the natives in the central portion of Australia from the point of view of medical treatment and on the incidence and extent of certain diseases, including myiasis, venereal diseases and septic conditions. There was no medical or nursing service for aborigines or half-castes. The Australian Inland Mission employed trained nurses to look after the white population in Oodnadatta, Alice Springs, Marranboy, Victoria River Down, Hall's Creek, Innaminka and Birdsville. The proposal was put forward that the Australian Inland Mission should be asked to assist in making provision for the training of natives or half-castes as orderlies, such as had been done in the Mandated Territory, and for the employment of such trained native orderlies under the control of qualified medical practitioners. Dr. F. L. Davies moved that the report be forwarded to the Minister for Home Affairs. The motion was seconded by Dr. J. Newman Morris and was carried.

Federal Council of the British Medical Association in Australia.

DR. R. H. Todd reported that in accordance with instructions he had placed the draft Memorandum and Articles of Association and By-Laws of the Federal Council of the British Medical Association in Australia in the hands of the solicitors and had discussed with them the several points which the solicitors had raised in the course of

consideration. In the first place it was necessary to have regard to the uses of this document. The amended Articles of Association gave the Branches in Australia power to form a Federal Council and to have that council incorporated under one or other of the companies acts. The document had been prepared in such a way that it would be suitable for a corporate body. The Memorandum of Association was adopted. The Committee proceeded to consider the Articles. On the motion of the adoption of Clause 13 Dr. F. A. Hadley raised the question whether an executive body or directorate was a necessity. He pointed out that if the affairs of the Federal Council were entrusted to a directorate, the whole principle on which the constitution of the Federal Council was based would be changed. More particularly the distant Branches would not be properly represented. If they could not do without an executive, he hoped that provision would be made for proxy voting. He admitted that he did not like the idea.

Dr. F. L. Davies said that the object was to expedite the handling of matters when a principle had been established. He assumed that the Federal Council would not be able to undertake any action that involved a new principle.

Dr. Bronte Smeaton thought that the object was merely to hasten the work and not to alter it radically.

Dr. Newman Morris suggested that the Federal Committee possessed executive powers. The object of founding a Federal Council was to take prompt action when matters of urgency arose. An executive body should not have powers to interfere with the policy of the Branches. He approved of the idea of an executive.

 $D_{R}.\ F.\ A.\ Hadley asked what the powers of the Federal Council would be.$

Dr. R. H. Todd stated that delays occurred in the Federal Committee work because the Secretary was left to carry out all the work and he was able to devote only a small amount of his time to it. The executive committee could be called together quickly. That was merely a matter of expense. In his opinion the directorate would not be acting as an executive committee if its duties were merely to carry out the expressed wishes of the Council. If that were all that was needed, the Chairman or the Secretary could carry out these duties. He did not wish to insist on the formation of a body with executive powers, but he thought that it would be advisable to make the appointment of such a body possible.

It was moved by Dr. F. L. Davies and seconded by Dr. H. W. Sweetnam that the clause as drafted be adopted.

Dr. Bronte Smeaton moved as an amendment that the clause be made permissive instead of mandatory. The amendment was seconded by Dr. F. A. Hadley and was carried, six voting for and three against. The clause as amended in the following form was adopted:

13. The Federal Committee may appoint an executive committee of its members which committee shall have the powers and perform the duties hereinafter provided.

The Committee adopted all the remaining clauses in the section headed "Executive Committee." In the section headed "Duties" Dr. J. Newman Morris moved that the title be altered to "Duties of the Federal Council" in order to distinguish it from duties of the executive committee.

It was agreed that since Clause 13 had been rendered permissive and not mandatory, certain consequential alterations would be needed in Clause 24, in which the management and business affairs of the Federal Council were defined, and elsewhere. The remainder of the Articles, as well as all the by-laws as drafted, were approved. On the motion of Dr. R. H. Todd, seconded by Dr. J. Newman Morris, it was resolved that the Memorandum of Association, the Articles and the By-Laws be set up, be submitted to the Branches and be considered at the next meeting of the Federal Committee.

The Memorandum and Articles of Association and the By-Laws will be published in a subsequent issue of this journal. Dr. E. S. Meyers moved on behalf of the Queensland Branch:

That it be a suggestion that the British Medical Association be written to by the Federal Committee and requested to make a grant towards the establishment of a Federal Council in Australia.

The motion was seconded by Dr. D. Gifford Croll.

Dr. F. L. Davies expressed the opinion that the contribution paid by the overseas Branches was too high. He thought that the contribution was higher than necessary. It amounted to twenty-five shillings and sixpence per member.

Dr. J. Newman Morris did not like the suggestion. The Australian Branches should be in a position to establish their own Federal Council.

Dr. R. H. Todd said that the New South Wales Branch did not support the suggestion. The motion was withdrawn.

Medical Research Council.

Correspondence was read in connexion with a motion from the Queensland Branch:

That the Federal Committee be requested to take further steps in connexion with the resolution passed at the meeting of the Federal Committee on April 4, 1928, with regard to the establishing of a medical research council.

Dr. E. S. Meyers moved the motion standing in the name of the Queensland Branch. This was seconded by Dr. D. G. Croll and was carried.

National Insurance.

A letter was read from the Queensland Branch giving notice of motion as follows:

That the question of medical services under the National Insurance Bill be reopened for discussion at the next meeting of the Federal Committee.

There were two or three points that Dr. Meyers wished to bring up, including the fees for certificates and the absence of equal representation of the medical profession and the approved societies. As the matter was no longer urgent, it was resolved that further consideration should be deferred.

Cost of Antitoxin.

Dr. D. G. Croll, on behalf of the Queensland Branch, asked the Federal Committee to approach the Federal Government in regard to the disparity between the price of diphtheria antitoxin charged to hospitals and the charge to the public. It was resolved to refer the matter to the several Branches in order that more information could be collected.

Votes of Thanks.

On the motion of Dr. J. Adam Dick, seconded by Dr. D. G. Croll, a hearty vote of thanks was accorded to Sir Henry Newland for the manner in which he had conducted the meeting.

Date and Place of Next Meeting.

The date and place of next meeting were left in the hands of the Chairman.

NOMINATIONS AND ELECTIONS.

THE undermentioned have been nominated for election as members of the New South Wales Branch of the British Medical Association:

Appel, Godfrey Hugh, M.B., B.S., 1928 (Univ. Sydney), Women's Hospital, Crown Street, Sydney.

Saleh, Michael George, M.B., B.S., 1928 (Univ. Sydney), 282, Edgecliff Road, Edgecliff.

THE undermentioned have been elected members of the New South Wales Branch of the British Medical Association:

Chaffer, Arthur Ernest Fraser, M.B., Ch.M., 1924 (Univ. Sydney), 157, Macquarie Street, Sydney.

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Jones, Ernest Benjamin, M.B., Ch.M., 1927 (Univ. Sydney), St. Mark's Road, Randwick.

Thomas, Ivor Gwynne, M.B., B.S., 1929 Sydney), Sydney Hospital, Sydney.

Rawle, Kenneth Charles Trineman, M.B., Ch.M., 1926 (Univ. Sydney), 93, New South Head Road, Vaucluse.

Nott, Lewis Windermere, L.R.C.P. (Edinburgh), 1918, L.R.C.S. (Edinburgh), 1918, L.R.F.P.S. (Glasgow), 1918, Canberra, Federal Capital Territory.

THE undermentioned have been elected members of the Victorian Branch of the British Medical Association:

Alcock, Alfred Edmund, M.B., B.S., 1929 (Univ. Melbourne), 16, Stradbroke Avenue, Toorak.
Lempriere, William Wettenhall, M.B., B.S., 1929 (Univ.

Melbourne), Trinity College, Carlton.
Scholes, John Lelean, M.B., B.S., 1929 (Univ. Melbourne), Nestley Avenue, Ivanhoe.
Temperley, Georgina, B.A., M.B., B.S., 1929 (Univ. Melbourne), Park Place, South Yarra.

Correspondence.

INFANT FEEDING.

SIR: I wish to direct your attention to a rather serious misrepresentation of the discussion on infant feeding in THE MEDICAL JOURNAL OF AUSTRALIA of October 5, 1929.

On pages 516 and 517 Dr. Margaret Harper's contribution to the discussion is not reported correctly. The substance of what she said after her opening remarks on the superiority of natural feeding over all artificial feeding systems, was that with regard to artificial feeding she agreed with Dr. Boyd Graham that the theoretical caloric requirement should be the basis of feeding. She found that a mixture containing twenty calories to the ounce was the best for the normal infant. The protein constituents of the mixture used should supply from 10% to 15% of the total calories. The fat and carbohydrate contents should be determined, using the composition of human milk as a guide. Fat being merely a combustible, may be replaced to a certain extent by carbohydrate. Infants can take a mixture containing 3.5% of fat if the protein content is not too high. We can use practically any mixture or any sugars. She did not use lactic acid whole milk for feeding normal healthy infants, but had used it for infants who required a concentrated feeding, until they reached the expected weight for age at which time she considered that the caloric value per ounce of the feeding should be graded back and the volume of the feeding increased until the infant was receiving a feeding of a caloric value of approximately twenty calories to the ounce.

In my reply to Dr. Margaret Harper's remarks (page 518) I stated that I had calculated that the protein in lactic acid whole milk provided 15% of the total calories which fulfilled Dr. Harper's requirements, and that in my experience results had been very gratifying when I had used it for normal healthy babies, even from the time when they were only a few weeks old.

Yours, etc.,

H. BOYD GRAHAM.

14, Collins Street, Melbourne. October 7, 1929.

MALARIAL THERAPY.

SIR: Might I be permitted to correct a statement made by Dr. C. A. Hogg in your issue of September 21, 1929, in reference to malarial therapy in Australia?

Acting under the suggestion of Dr. John K. Adey, the Medical Superintendent of the Mental Hospital at Sunbury, Victoria, I inoculated six general paretics with a strain of benign tertian malaria, obtained from a malarial patient at the Melbourne Hospital. The first successful inocula-tion was made on April 26, 1925, and five patients were subsequently inoculated from one to the other. Three of subsequently inoculated from one to the chart, these patients who achieved a remission of symptoms, were these patients who achieved a remission of symptoms, were discharged and have remained well since then. These results of what I believe to have been the first successfully inoculated patients in Australia were published by me in an article on malarial therapy in your journal on April 10, 1926.

Another batch of patients at Sunbury were subsequently inoculated in 1926, the blood being again obtained from the Melbourne Hospital on May 7, 1926. This series was referred to by me in a report published in your journal on April 30, 1927. This strain died out through lack of on April 30, 1927. This stra suitable patients to inoculate.

A third strain was obtained from the Melbourne Hospital in May, 1927, and five patients were inoculated at Mont Park, two of whom are alive and well today. This strain, however, was discontinued when it was found to be a mixed infection and liable to cause death.

It was towards the end of this year (1927) that through the courtesy of Dr. Hogg and Dr. Latham we obtained a pure strain of benign tertian malaria which we have been using at Mont Park with gratifying results ever since and which was sent to South Australia and to Western Australia in the manner related by Dr. Hogg.

Yours, etc.,

RER. S. ELLERY,

Neurologist to the Victorian Mental Hospitals. 20, Hillcrest Avenue,

Kew, Victoria. September 22, 1929.

COMPULSORY NOTIFICATION OF PUERPERAL SEPSIS.

SIR: Until the present, compulsory notification of disease, being a breach of professional confidence, has only been accepted by the medical profession in the case of those diseases which endanger other people than the patient concerned, and where the knowledge of disease is capable of practical application, that is, where notification carries with it some immediate practical benefit to the community. Is it right and proper to make a "disease" compulsorily

notifiable merely for the purposes of research? That this is the object of the New South Wales regulation is sufficiently clear from its "definition" of puerperal infection, for this has been framed in such a way as to cover most ailments occurring during the puerperium, so refusing to the general practitioner his proper function of diagnosis.

If the New South Wales department wishes to make a study of the ailments associated with childbearing (a name that carries with it no preconceptions and no hint of blame), there is no need for compulsion, for there must surely be a great store of material accessible in the records of the midwifery hospitals with attached antenatal departments. No doubt enthusiastic doctors would also contribute reports from their practice. Research should not be confined to fatal cases; it is in the beginning and not the end of illnesses that we shall find the underlying causes.

Successful research is due not merely to a collection of statistics, but to an imaginative interpretation of the facts disclosed by them. Your editorial remark that there has been too implicit a dependence on orthodox doctrines and accepted dogmas is true and may be illustrated by reference to the Australian reports on maternal mortality where all febrile puerperal conditions are attributed by officials to "puerperal sepsis," the contrary opinion of the doctor in attendance being put down either to dishonesty That this preconception still governs the or incapacity. New South Wales official medical mind is obvious from a study of the voluntary questionnaire, where extraordinary space is given to the names and addresses of attendants and buildings involved and very little space to housing conditions (such as number of rooms), weekly salary, occupation of mother, number of persons she has to look after, leisure, exercise, dress, details of diet, condition of teeth and gums, previous illnesses, previous obstetric history, previous menstrual history; while the duration of labour is asked for, the duration of the individual stages is neglected and hæmorrhage is conspicuous by its absence. The indications for forceps are not asked for. Many other points of practical and theoretical importance are omitted.

Now imagination is an individual and not an official attribute; anyone gifted with it may learn a lot from an analysis of even so few as twenty or thirty consecutive cases, more especially if he adopt a vertical columnar method rather than a horizontal one, for it possesses an elasticity of record and an ease of comparison and counting not present in the latter. If symptoms as well as signs be recorded, the analysis will give great precision to his knowledge and make clear previously hidden relations and it is possible he may be visited by the idea which will unify and interpret the present prevailing differences of opinion. The explanation of our contradictory data depends on someone striking the "true scent" and not on a compulsory accumulation of records dealing with gloves, forceps and hospitals. That Listerism and antenatal care are not the whole of the story is evident from the fact that both mothers and new-born infants are dying at as great or greater a rate than before the general adoption of these measures.

Yours, etc.,

MARY C. DE GARIS.

Geelong, Victoria. September 29, 1929.

Proceedings of the Australian Gedical Boards.

VICTORIA.

THE undermentioned have been registered under the provisions of Part I of the Medical Act 1915, of Victoria, as duly qualified medical practitioners:

Adamson, John Francis, M.B., B.S., 1929 (Univ. Mel-

bourne), 67, Kooyong Koot Road, Hawthorn. Alcock, Alfred Edmund, M.B., B.S., 1929 (U.Melbourne), 16, Stradbroke Avenue, Toorak.

Benham, Lalage Rosamond Agnes, M.B., B.S., 1929 (Univ. Melbourne), 19, Glencairn Avenue, Coburg. Bennett, Walter Hermiston, M.B., B.S., 1929, Univ. Melbourne), 29, Inverness Avenue, Malvern.

Burke, Frank David, M.B., B.S., 1929 (Univ. Melbourne), 8, Coppin Street, East Malvern.

bourne), 8, Coppin Street, East Malvern.

Burston, Geoffrie Carthew, M.B., B.S., 1929 (Univ. Melbourne), 67, Murphy Street, South Yarra.

Dallimore, George Menzies, M.B., B.S., 1929 (Univ. Melbourne), 379, Bay Street, North Brighton.

Edison, Milton Gray, M.B., B.S., 1929 (Univ. Melbourne), John Street, St. Kilda.

Edmonds, Horace Joseph Carlyle, M.B., B.S., 1929 (Univ. Melbourne), Amelia Street Glen Iric

(Univ. Melbourne), Amelia Street, Glen Iris.

(Univ. Melbourne), Ameria Street, Grein 1718.
 Fitzgerald, William Edward, M.B., B.S., 1929 (Univ. Melbourne), Newman College, Carlton.
 Gardiner, Thomas Joseph, M.B., B.S., 1929 (Univ. Melbourne), 88, Athol Street, Moonee Ponds.

Gerstman, Samuel Rudolph, M.B., B.S., 1929 (Univ. Melbourne), 113, Addison Street, Elwood. Gilbert, Thomas Miles, M.B., B.S., 1929 (Univ. Melbourne), Newman College, Carlton.

Gleadell, Leslie Westfield, M.B., B.S., 1929 (Univ. Melbourne), "Merida," Rennison Street, Beaumaris.

Grove, John Lewers, M.B., B.S., 1929 (Univ. Melbourne), Methodist Ladies' College, Kew. Hendry, William Joseph, M.B., B.S., 1929 (Univ. Hendry, William Joseph, M.B., B.S., 1 Melbourne), Newman College, Carlton.

Melbourne), Newman Conlege, Carton.

Hinchley, Alister Ashworth, M.B., B.S., 1929 (Univ. Melbourne), Green Street, Wangaratta.

Hoban, Maxwell, M.B., B.S., 1929 (Univ. Melbourne), 136, Canterbury Road, Canterbury.

Hurley, Edmund Reginald, M.B., B.S., 1929 (Univ. Melbourne), Numerical

Melbourne), Numurkah,

Lee, Terence Joseph, M.B., B.S., 1929 (Univ. Melbourne), Newman College, Carlton.
Lempriere, William Wettenhall, M.B., B.S., 1929 (Univ.

Melbourne), Trinity College, Carlton. Loorham, Leo Patrick Lawrence, M.B., (Univ. Melbourne), 123, Chetwynd Street, North Melbourne.

Meehan, John Francis, M.B., B.S., 1929 (Univ. Melbourne), 47, Davis Avenue, South Yarra.

Morgan, Francis Patrick, M.B., B.S., 1929 (Univ. Melbourne), "Niddrie," Keilor Road, Essendon. Muir, William, M.B., B.S., 1929 (Univ. Melbourne), 34, Grey Street, St. Kilda.

Munro, Robert, M.B., B.S., 1929 (Univ. Melbourne), 4, Byron Street, St. Kilda. Murphy, Eileen Mary, M.B., B.S., 1929 (Univ. Melbourne), Finley, New South Wales.

Nattrass, Roland Hodgson, M.B., B.S., 1929 (Univ. Melbourne), 66, Buckley Street, Essendon.
Osborn, Leslie Andrewartha, M.B., B.S., 1929 (Univ.

Melbourne), Queen's College, Carlton.

Reed, Joseph Clynton, M.B., B.S., 1929 (Univ. Melbourne), 237, Graham Street, Port Melbourne.

Scholes, John Lelean, M.B., B.S., 1929 (Univ. Melbourne), 5, Westley Avenue, Ivanhoe.

Sheppard, Frederick Augustus Berrill, M.B., B.S., 1929 (Univ. Melbourne), Melbourne Hospital.

Stonham, Franklyn Victor, M.B., B Melbourne), Melbourne Hospital. B.S., 1929 (Univ.

Temperley, Georgina, M.B., B.S., 1929 (Univ. Melbourne), "Homa," 40, Park Place, South Yarra.

Thomson, David Scott, M.B., B.S., 1929 (Univ. Melbourne), 12, Cosham Street, Middle Brighton.

van Nooten, George Henry, M.B., B.S., 1929 (Univ. Melbourne), 27, Anderson Street, East Malvern.
Watson, Heyworth Alexander Wigglesworth, M.B., B.S., 1929 (Univ. Melbourne), 14, Tintern Avenue, Toorak.

Wedlick, Leigh Thornton, M.B., B.S., 1929 (Univ. Melbourne), 22, Glen Street, Hawthorn. White, Salome Jean, M.B., B.S., 1929 (Univ. Mel-

winte, Salome Jean, M.B., B.S., 1929 (Univ. Met-bourne), 32, Havelock Road, Hawthorn East. Williams, Stanley William, M.B., B.S., 1929 (Univ. Melbourne), 158, Orrong Road, Caulfield. Wright, Roy Douglas, M.B., B.S., 1929 (Univ. Melbourne), Queen's College, Carlton.

NEW SOUTH WALES.

THE undermentioned have been registered under the provisions of The Medical Act, 1912 and 1915, of New South Wales as duly qualified medical practitioners:

Abbie, Andrew Arthur, M.B., B.S., 1929 (Univ. Sydney).

Accola, James Bernard, M.B., B.S., 1929 (Univ. Sydney). Anderson, Edley Hector, M.B., B.S., 1929 (Univ. Sydney).

Armstrong, Thomas Michael John, M.B., B.S., 1929 (Univ. Sydney).

Bernard, Charles ffranks, M.B., B.S., 1929 (Univ. Sydney).

Callose, Angelo, M.B., B.S., 1929 (Univ. Sydney). Constable, Claude James, M.B., B.S., 1929 (Univ. Sydney).

Denning, Ben, M.B., B.S., 1929 (Univ. Sydney).

Edwards, Colin Campbell, M.B., B.S., 1929 (Univ. Sydney).

Fisher, John Howard, M.B., 1929 (Univ. Sydney).

Grey, William Scorboria, M.B., 1929 (Univ. Sydney). Inglis, Alexander, M.B., B.S., 1929 (Univ. Sydney). Kelly, Ronald William Grant, M.B., 1929 (Univ. Sydney).

Lee, Douglas Harry Kedgwin, M.B., 1929 (Univ. Sydney)

McClelland, Henry Walker Hamilton, M.B., B.S., 1929 (Univ. Sydney). Maffey, Reginald Errol, M.B., B.S., 1929 (Univ. Sydney).

Vo

Phillips. Gilbert Edward. M.B., B.S., 1929 (Univ. Sydney).

Ping, Aubrey Moore, M.B., 1929 (Univ. Sydney). Saxby, Howard Morris, M.B., 1929 (Univ. Sydney). Shayler, William Ernest, M.B., B.S., 1929 (Univ. Sydney)

Sillar, Donald Boyd, M.B., B.S., 1929 (Univ. Sydney). William, M.B., B.S., 1929 (Univ. Spark, Edward Sydney).

Spark, Torry Ernest Hester, M.B., B.S., 1929 (Univ. Sydney).

Stanley, John Joseph, M.B., B.S., 1929 (Univ. Sydney). Turnbull, Harley Irwin, M.B., B.S., 1929 (Univ. Sydney).

Walker, Norman Arthur, M.B., 1929 (Univ. Sydney). Ward, John Thomas, M.B., B.S., 1929 (Univ. Sydney).

Books Received.

THE TREATMENT OF RHEUMATOID ARTHRITIS, by A. H. Douthwaite, M.D., F.R.C.P. (London); 1929. London: H. K. Lewis and Company, Limited. Crown 8vo., pp. 88. Price: 6s. net.

THE HISTORY AND TRADITIONS OF THE MOORFIELDS EYE HOSPITAL: ONE HUNDRED YEARS OF OPHTHALMIC DISCOVERY AND DEVELOPMENT, by E. Treacher Collins; 1929. London: H. K. Lewis and Company, Limited. Demy 8vo., pp. 238, with illustrations. Price: 12s. 6d. net.

Diary for the Wonth.

OCT. 22.—New South Wales Branch, B.M.A.: Medical Politics Committee.

OCT. 31. OCT. 31. Nov. 1 Nov. 1

Committee.

-Victorian Branch, B.M.A.: Council.
-Section of Medical Literature and History, New South
Wales Branch, B.M.A.
-Queensland Branch, B.M.A.: Council.
-New South Wales Branch, B.M.A.: Branch.
-South Australian Branch, B.M.A.: Branch.
-Queensland Branch, B.M.A.: Branch.
-Victorian Branch, B.M.A.: Council.
-Tasmanian Branch, B.M.A.: Council.
-Eye, Ear, Nose and Throat Section South Australian Branch, B.M.A.
-Western Australian Branch, B.M.A.: Council. Nov.

Gedical Appointments.

Dr. Henry Rogerson (B.M.A.) has been appointed Acting Medical Superintendent of the Hospital for the Insane, Kew, Victoria.

Dr. Alfred John Spencer Cecil Roberts (B.M.A.) has been appointed Acting Visiting Medical Officer to the Farm. Home for Boys, Westbrook, Queensland.

Wedical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xviii.

ISLAND MUNICIPALITY, TASMANIA: Medical FLINDERS Practitioner.

INSPECTOR-GENERAL OF HOSPITALS DEPARTMENT, ADELAIDE: Honorary Assistant Pathologist.

LAUNCESTON PUBLIC HOSPITAL, TASMANIA: Resident Medical Officer (Male).

THE UNIVERSITY OF ADELAIDE: Elder Professor of Anatomy and Histology.

VICTORIAN EYE AND EAR HOSPITAL: Medical Superintendent, Resident Surgeons (3).

WOMEN'S HOSPITAL, MELBOURNE, VICTORIA: Medical Superintendent.

Medical Appointments: Important Motice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
New South Wales: Honorary Secretary, 21, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company, Limited. Pheenix Mutual Provident Society.
Victorian: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Henerary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to sub mit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
South Australian: Secretary, 207, North Terrace, Adelaide.	All Contract Practice Appointments in South Australia. Booleroo Centre Medical Club.
WHSTERN AUS- TRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVI- SION): Honorary Secretary, Welling- ton.	Friendly Society Lodges, Wellington New Zealand.

Medical practitioners are requested not to apply for appointments to positions at the Hobart General Hospital, Tasmania, without first having communicated with the Editor of The Medical Journal of Australia, The Printing House, Seamer Street, Glebe, New South Wales.

Editorial Motices.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to The Madical Journal of Australia alone, unless the contrary be stated.

All communications should be addressed to "The Editor." THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, Sydney. (Telephenes: MW 2651-2.)

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